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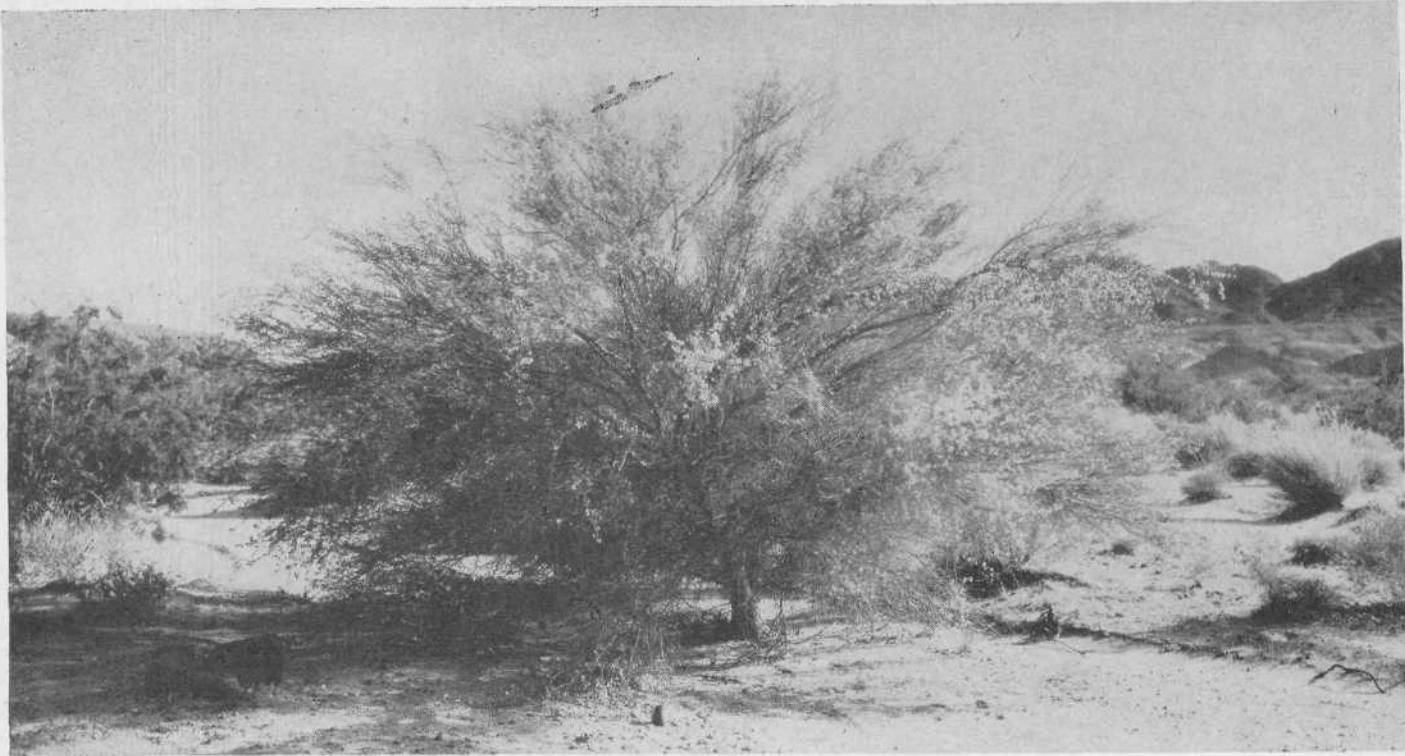
Desert

MAGAZINE



JUNE, 1944

25 CENTS



Golden-flowered Palo Verde tree in bloom. Photo by Leo Hetzel.

EL SAGUARO

By CORA L. KEAGLE
Pixley, California

Candelabra of the Giants,
When Gargantuan feasts are spread
On the desert, in the moonlight,
Boulders white for loaves of bread,

June days bring another feasting
When Saguaro's fruit is red;
To Papago Indian tribesmen,
It is wine and fruit and bread.

DESERT BUTTERFLIES

By JOANNE DE LONGCHAMPS
Reno, Nevada

Across these grey forbidding sands
Roots twist like gnarled and aged hands.
Rock-pitted, still, the desert lies
Below unruly cloud-swept skies.
How strange to see them in this place,
In colorless and rockbound space,
Where no bird sings and no wing flies,
These hosts of golden butterflies!
What brought them here, what mocking mirth
Has scattered now across this earth
Such fragile things, so soon to die
Beneath an unrelenting sky?

JOSHUA TREE

By MONTE HUMPHREYS
San Diego, California

Ghost-white glow of an argent moon
Paints frosty light on dervish arms,
Unlike, at night, your self at noon,
A desert lord of nocturne charms.

Form grotesque of sun's domain,
Of twisted, gnarled and knotted shape,
Are you wracked and warped with pain,
Or soul serene of wasteland scape?

Are you true self—or soul contrite
Of reckless farer by the way,
Who rashly dared the desert's might,
And perished in the blazing day?

Palo Verde Dreams

By GRACE CULBERTSON
San Diego, California

Upon my wall a palo verde tree
Breaks into bloom as if before my eyes.
It brings back other sunlit springs to me
As clear and wide a cloudless desert lies.
Within these bands of gold great vistas gleam
And far horizons fade beyond framed bounds.
Upon white desert sands I'm wrapped in dream
And in white silences drown raucous sounds.
"A happy sort of picture," someone said,
"The essence of all springs is captured here."
And when the day dawns dull and grey and dead
Glad promises of bud and leaf appear.
A palo verde tree in yellow bloom—
The desert smiling in my city room.

A DESERT RATTLESNAKE

By J. C. DAVIS
San Bernardino, California

Leaving his winter lair,
Out from that secret place,
Into the daylight glare
Gliding with languid grace;
Sinuously and slow,
As after sudden rain
Small rivulets groping go
Athwart a thirsty plain.
In diamond tracery bold,
His musky, dusky skin,
Broidered in beads of gold,
Fairer than tempting sin!
Lidless his basilisk eyes;
His head a poisoned dart;
Poised like a wind-blown flower
Above — alert — apart!
His tongue a lambent flame
That, flickering ceaselessly
Bids all, "Beware, I come!"
I pass! Make way for me!"
Tense curves of virile strength
Relaxed; his vantage won;
Straight all his beauteous length
Lies in the hot white sun.

SONNET

By JAMES B. DUMMER
Los Angeles, California

If I must live alone, O let me dwell
Not in the narrow canyons of a town,
Not where a mass of jumbled buildings frown
On endless streets forever parallel,
But in some place where desert hillocks swell
Above the vales o'er-spread with yuccas
bright,
Where skies are never dulled by smoke at
night
And wary horned toad basks in sandy dell.

There 'neath the silver lamps that burn on high
I'll feel your friendship firm and deep repose,
And muse on tranquil days now long gone by
If I must live alone as you dispose,
For we must dwell apart and calmly try
To banish thought that once our paths were
close.

DESERT MAGIC

By MABEL E. LOWER
Los Angeles, California

Have you felt the desert's magic—
Breathless silence 'neath the moon?
Seen the silvery shadows blending—
Sage and sand and drifting dune?

Have you wandered through this dreamland,
Arms and hearts alike entwined—
Down the starlit desert pathways;
Night's soft purple curtain folding
Care away, and gently holding
Just two souls in sweet enchantment,
Leaving all the world behind.

If you've known this Heaven-on-Earth land,
Dreamed the desert night away,
Heart to heart in sweet contentment,
As moon's waning brought the day.

Then you've walked in God's own garden,
Few there are who hold the key—
While the world roars by the gateway—
Knowing not this ecstasy.

DESERT Close-Ups

• The letter by John Hilton appearing in this issue was intended for Desert's editor, Captain Randall Henderson, commanding officer at an ATC oasis station in the Sahara desert of North Africa. Since it answers some of the questions of desert lovers about war's influence on their favorite haunts in the Colorado and Mojave deserts of California, we thought they wouldn't mind sharing the letter with Desert's readers. It also will explain to those many gem collectors why John has not been logging more field trips for them.

• This issue carries the second editorial page written by Corporal Rand Henderson during the year he has served with the Marine Corps in the Pacific and Southwest Pacific theaters. Now that life is peaceful compared with the Tarawa period, some of his spare time is being devoted to writing. Until he can come home to Desert, to write some of those desert traveltops he is thinking about, we hope he will increase his contributions as a "foreign correspondent."

• This summer Desert will have a pictorial feature in which the "characters" are absent—only their tracks will be visible. But those tracks have revealed the life drama of their owners to the camera of Lt. Richard L. Cassell, D.C., who photographed them in Imperial Valley. Lt. Cassell, who has been with Army Air Force Flexible Gunnery school at Las Vegas, Nevada, since spring, has been using the 16mm motion picture camera six years in filming birds and insects. His "Warriors of Another World" won Lloyd Bacon Trophy in 1942 national contest conducted by Home Movies magazine. In 1943 it was judged one of Ten Best non-theatrical motion pictures in annual national contest conducted by Movie Makers magazine. His motion picture "Humming Bird" has been accepted by Coordinator of Inter-American Affairs and is being translated into foreign languages for distribution in Latin America. His articles and photographs have appeared in Home Movies magazine, U. S. Camera, Nature magazine, Natural History magazine.

• Novel subject for Desert readers will be Oren Arnold's description of the Western style square dance which is being revived in Arizona. The patterns of such dances as the Arizona Star, the Wagon Wheel, the Baby's Cradle, are intricate but never would be confused with those of the conga, the samba or the helicopter hop.

CREED OF THE DESERT

By JUNE LE MERT PAXTON
Yucca Valley, California

You call me queer, and weird at night;
My swords you often rue;
Yet in my arms I take delight
To hold white blooms for you.



Volume 7

June, 1944

Number 8

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JOSHUA BLOSSOM. Photograph by Nicholas N. Kozloff, San Bernardino, California.

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Fossil mountain near Jack Watson's cabin in north end of Wah Wah valley contains finest Ordovician fossils in Utah. Frank Beckwith photo.

Finding a whole mountain of fossils is just about enough to make rockhunters like Charles Kelly and Frank Beckwith "go crazy." They had heard that somewhere beyond the Confusion range in central western Utah there were some rare fossils. But when they drove into the isolated area, pushing and shoveling along the desert roads, they did not expect to be the discoverers of the richest deposit of its kind in the state of Utah. They not only found an abundance of fossils but when they went to Jack Watson's little cabin to spend the night he showed them what he called "live trilobites," nearest modern relative of that ancient form of life.

Fossil Treasures of Wah Wah

By CHARLES KELLY
Map by Norton Allen

FOR forty miles we jolted over a rough desert road, leaving a long white plume of alkali dust. Then we ground in low gear to the summit of Marjum pass in the House range, with Notch peak looming above. While the engine cooled we looked back toward Delta, Utah, our starting point, a mere speck on the Sevier desert. Westward, toward the Nevada line stood a haphazard scattering of low mountains appropriately called the Confusion range. Somewhere in that geologic puzzle were said to be rare fossils. Frank Beckwith and I were determined to find them. Frank had been over the road once before, but the country was new to me.

At the western foot of the pass we turned south on a dim trail crosscut by deep channels eroded in the soft clay. After many miles of rough going we finally reached a bit of good road—the hard smooth bottom of a dry lake. Farther along were two more playas which afforded pleasant relief from the constant jolting. At last we reached an opening in the southern tip of the Confusion mountains, turned west and entered the extreme northern end of Wah Wah valley. Across the valley

stood a high ridge known as Fossil mountain, our immediate objective.

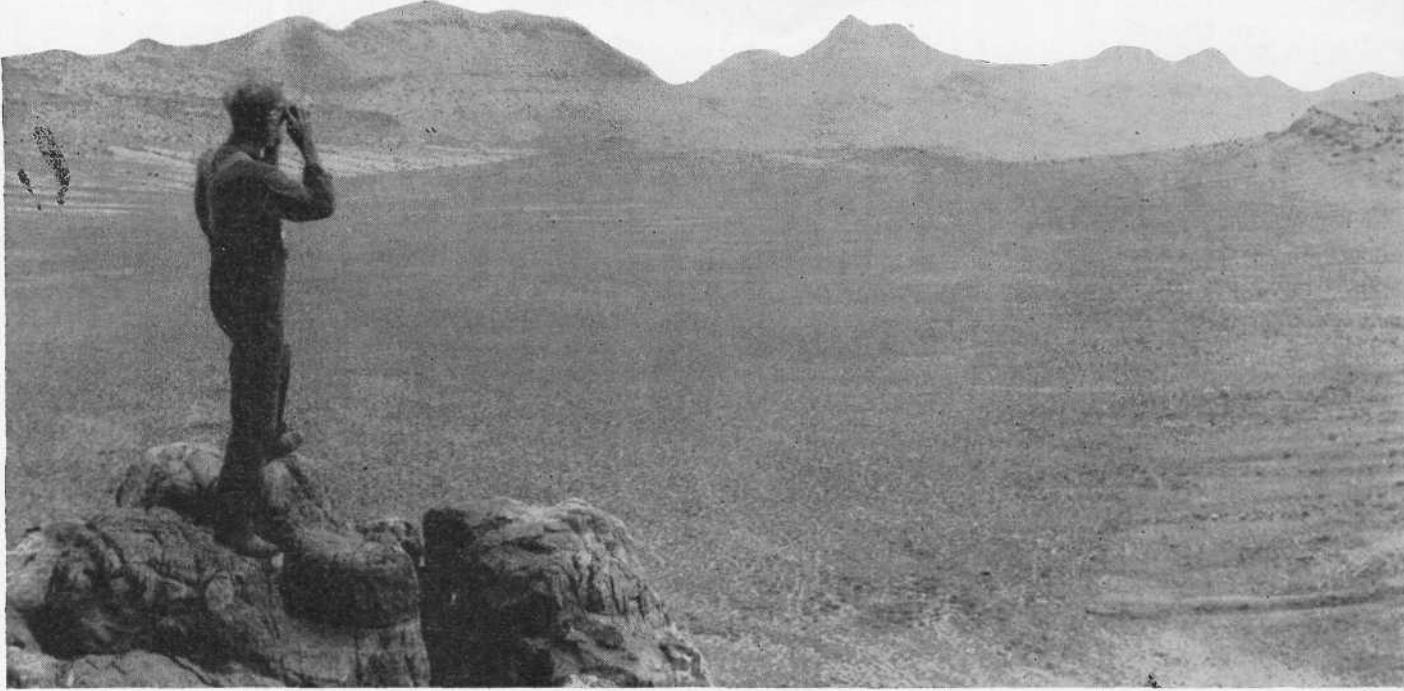
It took a lot of pushing and shoveling to negotiate the intervening sand, but we finally drove our car to the base of the ridge. Without stopping to eat lunch we each grabbed a gunny sack and some old newspapers in which to wrap specimens and started up the slope. Almost immediately we began to find fragments of fos-

sils washed down from above, and when we reached the fossil bearing strata Frank nearly went crazy. It proved to be the richest deposit of its kind in the state of Utah, and one so isolated it previously had been overlooked.

We already had collected many beautiful specimens of trilobites from the lower, middle and upper Cambrian formations of the House range. But Fossil mountain

This beautiful slab, now in Smithsonian institution, shows many forms of Ordovician fossils—*Pliomera* and *Bathyuriscus* trilobites, *Bryozoa*, *Pelecypods*, *Brachiopods*, *Fucoids* and *Graptolites*.





Jack Watson surveys Blind valley which has been his desert empire since he was a young man. There is but one narrow entrance to the valley, an ideal winter grazing range.

proved to be of the Ordovician or Lower Silurian period which followed the Cambrian and contained a much greater variety of ancient sea life. Most prominent were the cephalopods, a tube-like shell from the size of a pencil up to three or four feet long. Many were eroded free of enclosing rock and we soon had a pile of several hundred pounds. The chambered nautilus is a modern relative of the cephalopod, but its Ordovician ancestor was straight, and propelled itself by ejecting a jet of water from its siphuncle. In several specimens this inner chamber was beautifully crystallized.

Farther up the ridge we began to find fragments of trilobites. These were mostly *piomeria*. They seemed to have buried their heads in the mud, leaving their rears exposed, and these when weathered out had a spider-like appearance. In all our searching we found but two heads, both separated from the rest of the body. In the same rock were beautifully fluted *plectorthis* shells; *pelecypod* shells the size and shape of a navy bean; ostracods, looking like tiny oysters; several varieties of bryozoa, fucoids and colonies of graptolites. We also found one large *bathyuriscus* trilobite. These were all beautifully sculptured on the rocks by wind and rain, making very attractive specimens.

Then, on a little bench, I found a round

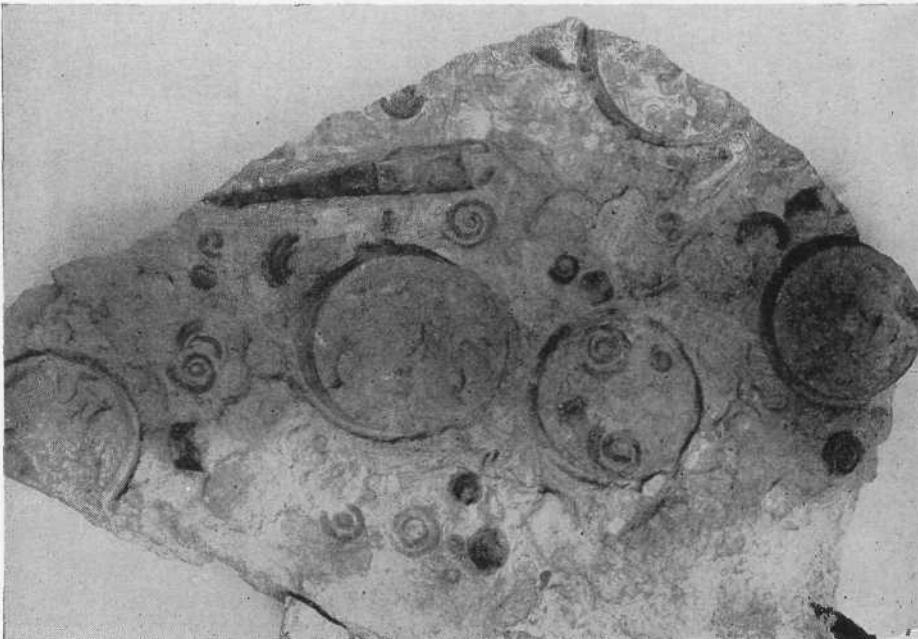
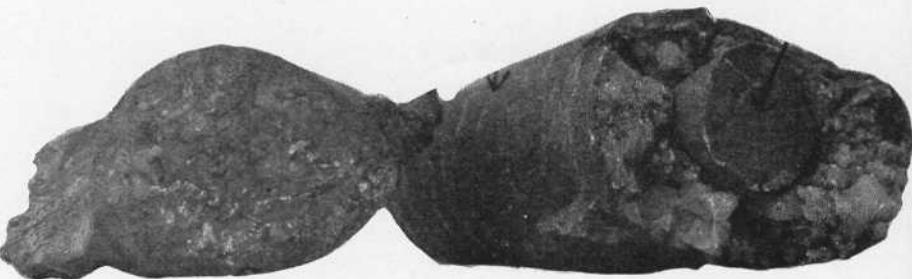
flat fossil, about two inches in diameter, that looked like a petrified sunflower.

"What's this?" I asked Frank.

"Holy jumping cats!" he shouted. "That's a receptaculite, sometimes called sunflower coral. It's really a type of

sponge, and rare as hen's teeth. I never heard of one being found anywhere in Utah. Where did you pick it up?"

I showed him and we both started searching. He picked up another close by. Then we both began to find more, nearly



Above right — Sections of large Cephalopod shells. Core in piece at right was originally the hollow siphuncle by which it propelled itself. Lower — Gastropods with cross sections of Cephalopods (large circles).

Beckwith photos.



The little cabin in Wab Wab valley where Jack lived alone for more than 30 years.

always in pairs. Within an hour I had 10, and Frank had 22. When we had exhausted that spot we climbed up and down the hill for another hour, but found no more. They seemed to have lived in a colony on that one little bench. I believe we collected them all.

"Jack Watson appeared to have been dried up by years of desert heat."



By late afternoon we each had several large piles of specimens scattered along the base of the ridge for a mile or more. It was evident we could not take them all, so we began sorting out the best, wrapping them carefully and carrying them in gunny sacks. When I reached the car after my third trip Frank was coming in with a heavy load. Dropping his sack on the ground he pulled out a thin slab of rock about 10 inches square, which he had carefully wrapped in his shirt for protection.

"Here's the prize of my whole collection!" he said proudly. "Did you ever see anything as beautiful as that?"

It was indeed an extraordinary specimen. The face of the slab was crowded with hundreds of fossils, including six different varieties, all standing in relief on the rock. When we wasted some of our precious water to wash it, each fossil shone like a jewel.

"I'm going to send that to the Smithsonian institution," he said. "I don't think they have any specimens from this locality." And that's where it went eventually, together with some of the rare receptaculite. Later, Dr. Charles E. Resser, of the Smithsonian, came out to visit Fossil mountain and pronounced it one of the finest Ordovician deposits he had seen.

"Where will we camp tonight?" I asked Frank as the sun dipped below Fossil mountain.

"Across the valley at Jack's place," he said.

"Jack's place?" I questioned. "Is there actually someone living in this desert?"

"Sure," he replied. "His shack is over there against the cliff." I looked but could see nothing but rocks. There wasn't a spring or creek within 40 miles, and I thought Frank was joking.

It took us an hour to plow through the sand. Then, turning a rocky point along the cliff on the east side of the valley I saw, in the gathering twilight, a small cabin and stock corral. There were no shade trees, no grass and no garden, but a tin trough indicated the presence of water nearby. Apparently it was not plentiful. A sign nailed

to the corner of the cabin read: "Water 10c Gal."

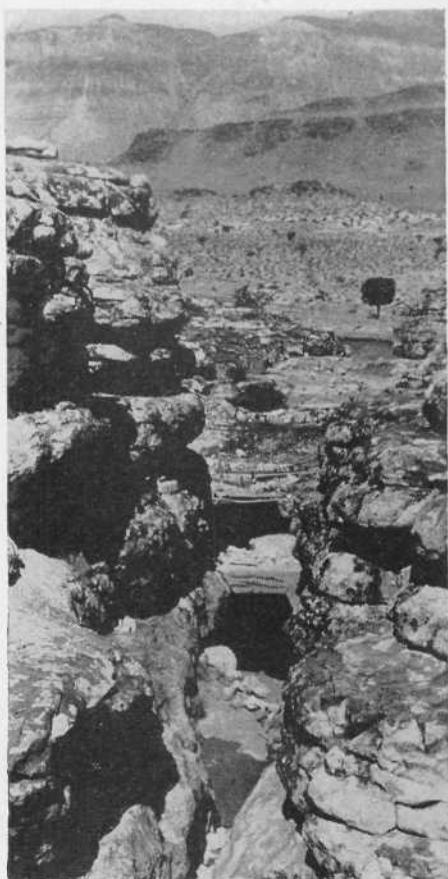
Hearing our car a man came out to greet us. Frank introduced him as Jack Watson, owner of the "ranch." He was a tiny man weighing 97 pounds. He was about 70 years old and appeared to have been dried up by years of desert heat. He was glad to have company and insisted on cooking supper for us. That night I learned something of his strange story.

While still a young man Jack had explored that section of desert when hunting stray cattle. Camping at a small spring he found the cattle in a hidden valley entirely surrounded by mountains, with one narrow entrance. Blind valley, as he named the place, contained some good desert vegetation and seemed to be an ideal winter grazing ground. He decided to quit his job and start his own ranch there. By locating on that spring he could control the range for 40 miles in any direction.

During the next winter he hauled lumber and built his cabin. Then he drove in a few head of cattle and brought out his wife. His stock did well on the virgin desert range. When the next winter came he drove his herd into Blind valley, put up a couple of poles and forgot about them until spring.

For the first few years everything went

Near Jack's cabin are the potholes in which he caught his meager water supply.



along fine. His herd increased and he was well pleased with his isolated location. Then came an unusually dry summer and his spring almost dried up. He began digging, hoping to increase the flow. He dug untiringly for days, but all he had was a series of potholes in the rock. Filled with gravel they had acted as a reservoir for rainwater. He had no spring!

A timely rain filled his potholes soon afterward. He was safe for that year. But to assure a larger supply he built a number of small dams. Even so, his situation was precarious, because his potholes sometimes would almost dry up between rains and the nearest living water was 40 miles away.

After a few years Jack's wife died. When we met him he had been living alone for 30 years. His cabin walls were hung with calendars for each one of those years, and although nothing ever seemed to happen, he faithfully kept a diary. His pets were a 12-year-old "colt," a 40-year-old mule, and a rattlesnake under the kitchen floor.

"What are you fellows looking for, anyway?" Jack asked us next morning after breakfast.

"Trilobites," Frank said. "We found some nice ones yesterday on the ridge across the valley."

"Cripes!" said Jack. "You don't need to go that far. I can get you a bushel of 'em right here. Live ones. My potholes are full of 'em."

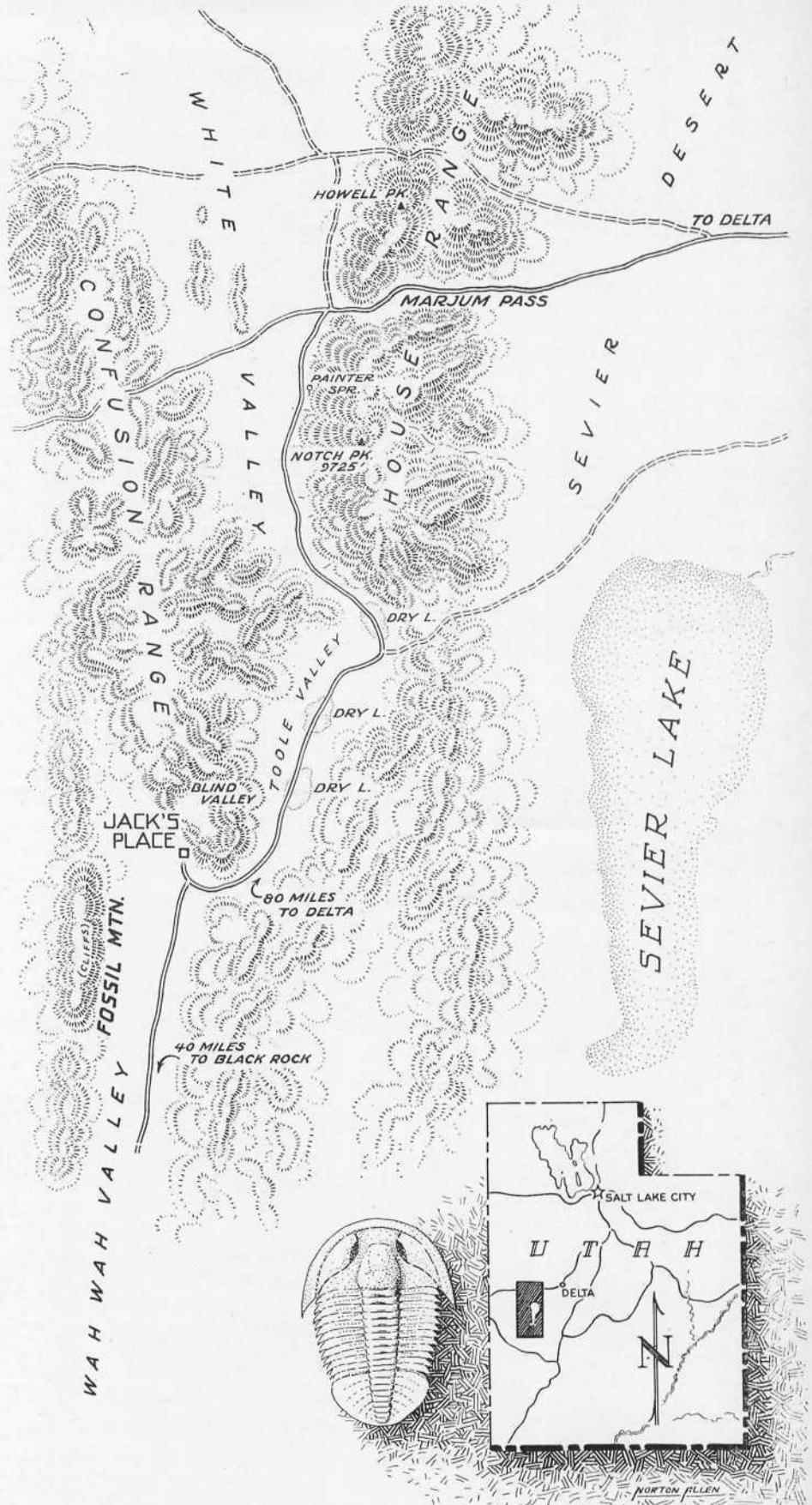
"Live trilobites?" I asked incredulously, wondering if the old man had lived alone so long he was a little crazy.

"Sure," he replied confidently. "Come on, I'll show you."

He led us to one of his deep potholes, dipped up a can of water and handed it to me. It was jumping with some kind of animal life. I poured some of it into my palm, and with it a real, live trilobite about as big as the end of my thumb. Nowadays scientists call them *Apis glacialis*, but they are the nearest modern relative of the ancient trilobite, one of the earliest forms of life. In late summer Jack's tanks are alive with them. When the water dries up they lay eggs in the mud, which hatch when the next rain falls. It was an odd coincidence to find the fossil and the live organism, separated by millions of years, in the same spot — the only place in Utah where either of us ever found "live trilobites." How they can survive in such a desert is a mystery.

Jack then took us to Blind valley, his little desert empire. As he enthusiastically pointed out its advantages for winter grazing, it was easy to understand why he had been held to that lonely spot for so many years. By controlling that hidden valley he was king of the desert for 40 miles or more in any direction.

In a shed back of his cabin Jack kept a



small truck with plenty of spare parts. He went to Black Rock, 40 miles south, two or three times a year for supplies. He kept the truck in good repair, since it was his insurance against dying of thirst in case his

water ran out. That possibility always hung over his head. He often had run short, but his holes had never been entirely dry.

After returning home from that trip I

used to think of old Jack Watson every time I turned on a water tap. I imagined finding him dead in his cabin, mummified by desert winds. He managed to survive that dry summer, and the next, which was even worse. But the third summer was a scorcher. Even city water was rationed, and I knew old Jack would be in trouble. Later, from Frank Beckwith, I learned what happened.

Jack waited until his last drop of water was gone, hoping for rain. When it didn't come he reluctantly decided to leave. But when he tried to crank the truck, it wouldn't start. He worked on it frantically until he was nearly exhausted—still it wouldn't go. There was nothing to do but try to walk out. He previously had placed milk cans full of water at intervals along the road, for just such an emergency, and was sure he could make it on foot. When he reached the first can, however, he was bitterly disappointed to find it empty—robbed by some sheepherder. He hurried on to the next, but it also was empty. Resting until nightfall, he continued walking, hoping to find water in some of his cans. But every one had been emptied. He didn't remember much of the last 20 miles, but stayed on his feet, stumbling into Black Rock the next afternoon, nearly dead from thirst. His mule came in next day, and the "colt" two or three days later.

When rain fell again in the fall, Jack went back to gather up the survivors of his herd. I didn't hear from him for a long time. Then he was brought to Salt Lake City to have his right arm amputated after a serious accident. He had ridden 285 miles without a dressing or a sedative. He was in the hospital a long time, but when he got out he headed straight back for Blind valley.

About a year later I met Jack in Delta. "Have you quit the ranch?" I asked.

"Yes," he said sadly, "I finally had to leave. I could have made it all right, except for just one thing. I couldn't chop wood with one hand."

"There's one question I'd like to ask you, Jack," I said. "It's been puzzling me a long time. When your waterholes went dry that time, why didn't you ride your horse or the old mule instead of walking those 40 miles?"

"Hell!" he said, looking foolish, "I never thought of it."

No one but Jack would want to live at Blind valley, so his shack has been empty for several years. Possibly his potholes have been filled up by cloudbursts. If any of you fossil hunters decide to visit Fossil mountain, take plenty of water. There isn't a spring within 40 miles.

DESERT QUIZ

To make the Sand Dune Sages continue to earn their high rating, this month's quiz has some questions to match their superior wits. Answers to several of them will be found in very recent issues of Desert Magazine, so Desert Rats and those yet uninitiated into the Desert Fraternity, as well as the Sages, should make a good score if they are observant readers. Subjects include Indian lore, archaeology, history, geography, mineralogy, desert lore, botany, Southwest literature, men who have played important roles in history and development of Southwest. Answers on page 34.

- 1—Rainmakers refers to—Pueblo Indians..... Craftsman who makes katchina dolls..... White men who brought irrigation to the desert..... Banks of clouds.....
- 2—Most of the state of Nevada once was covered by—Lake Bonneville..... Great Salt Lake..... Lake Lahontan..... A great forest.....
- 3—Brothers of Light refers to—Jesuit priests who established early missions in Southwest..... A clan of the Hopi Indians..... Teachers in first Indian schools..... Secret Spanish-American religious order.....
- 4—Japanese relocation camp at Poston, Arizona, was named after Charles D. Poston, who was a—Frontiersman..... Army officer..... Politician..... Sociologist interested in minority races.....
- 5—The banded "Mirage Stone" used by Navajo in ceremonials and by Zuñi to make fetishes is made from—Feldspar..... Aragonite..... Obsidian..... Calcite.....
- 6—if you were lost in the desert, without water, you would most likely find it by—Watching direction the birds were flying..... Looking for a trail made by animals..... Hunting for cactus..... Digging in sand dunes.....
- 7—Elevation of Twentynine Palms, California, is about—2000 feet..... 175 feet..... 4000 feet..... sealevel.....
- 8—Father Eusebio Kino, who was an important founder of Southwest missions, was of the—Franciscan Order..... Jesuit Order..... Dominican Order.....
- 9—Cactus most successfully used in making furniture is—Cholla..... Bisanaga..... Saguaro..... Night-blooming Cereus.....
- 10—Because of strict taboo, Navajo never kill—Deer..... Peccary..... Eagles..... Bear.....
- 11—Shell ornaments commonly found in ancient village sites in southern Arizona had their origin in—Gulf of Mexico..... Pacific Coast..... Gulf of California..... Salton Sea.....
- 12—Southwest desert area was called "Mystic Mid-region" by—John C. Van Dyke..... Harry Carr..... Arthur J. Burdick..... Wm. T. Hornaday.....
- 13—Mineral brought through Wingate Pass, in Mojave desert, over mono rail in 1920s was—Gold..... Epsom Salts..... Tungsten..... Silver.....
- 14—Rainy season in Navajo country of northern Arizona and New Mexico is in—Winter..... Spring..... Summer..... Throughout year.....
- 15—Corn was introduced into Southwest—from supply brought by the Pilgrims..... By Cortez who brought it to Mexico from Spain..... Was native to New World..... By Hopi whose legends say it was brought from underworld.....
- 16—if you were in a war plant and needed spiderweb silk with a diameter of five ten-thousands of an inch, you would—Select a single strand from the Green Lynx spider..... Split a strand from the Black Widow spider..... Weave several strands together..... Divide four ways a strand from the Golden Garden spider.....
- 17—Most conspicuous plant in the Southwest areas which botanists call Temperate Semi-desert, or Desert Grassland, is—Piñon pine..... Yucca..... Organ Pipe cactus..... Ocotillo.....
- 18—Highway which crosses Great Salt Desert, west of Salt Lake City, Utah, is—40..... 6..... 91..... 30.....
- 19—One of these Indian Pueblos is not located in Rio Grande valley of New Mexico—Laguna..... Isleta..... Santo Domingo..... Cochiti..... Tesuque.....
- 20—Mount Lemmon, in Arizona, is the highest peak in—Superstition mountains..... Pinal range..... Santa Catalina mountains..... San Francisco mountains.

Parade of the Pentstemons

By MARY BEAL

CONTINUING the Pentstemon quest, we select a few without the fiery brilliance of the Scarlet Buglers described in the May issue of Desert Magazine. One of the loveliest, Palmer's Pentstemon, is rather widespread at moderate to high altitudes, its graceful wands of delicately colored bloom lighting up slopes, washes and canyons, and exhaling a delightful fragrance. Etched in my memory is the vision of a magnificent clump over 5 feet tall, supremely beautiful in the late afternoon light. It appeared like magic at a bend of the road skirting the Providence mountains in eastern Mojave desert. It was standing at the edge of a shallow rainwash, its dozens of flower-strung stems gently swaying in the breeze.

Pentstemon palmeri

Several to many slender erect stems $1\frac{1}{2}$ to over 5 feet tall, from a woody base, more leafy below, the herbage hairless and lightly covered with a bloom, the narrow sessile leaves mostly lanceolate with shallow sharp teeth. The inch-long (or more) corolla is pale pink (or deeper) or orchid pink, with crimson lines in the throat extending well down the 3-lobed lower lip, the short tube abruptly dilated into the wide-open throat, showing the hairy palate and densely hairy tip of the sterile filament. Frequent from 3500 to 6500 feet in Mojave desert, Arizona, southern Nevada and Utah.

Pentstemon spectabilis

This showy species has ventured into the

desert from bordering ranges on the west, making itself at home on dry hills and in rocky canyons. Its stately clusters of stems, 2 or 3 feet tall, are generously bedecked with flowers of an entrancing gamut of color tones, the corollas over an inch long, bright blue or purplish blue, lighter at base, the abruptly dilated, bell shaped throat lilac or red-purple. A panicle often has 50 or more blossoms. The pale-green leaves are sharply toothed, the sterile stamen beardless. Look for it in April and May along the western edge of Colorado desert and in the western and southern borders of Mojave desert.

Pentstemon albomarginatus

A smaller species, growing in low clumps 6 to 10 inches high with several leafy stems from the long fleshy root, the herbage pale grey-green with a sheen. Leaves and sepals white-margined, flowers whorled in a spike-like leafy panicle, the corolla light to deep rose pink, throat paler with bright reddish lines and dense yellow beard. Found infrequently at moderate altitudes in April and May in sandy areas of western Arizona, southern Nevada and eastern Mojave desert.

Pentstemon antirrhinoides

An intricately-branched leafy shrub 2 to 7 feet high, with many small glossy rich-green leaves on pale woody branches. The very broad, gaping corolla is sulphur-yellow, washed with terra cotta or russet outside, the sterile filament densely bearded. Rather common up to 5000 feet in rocky canyons and mesas of southern and western



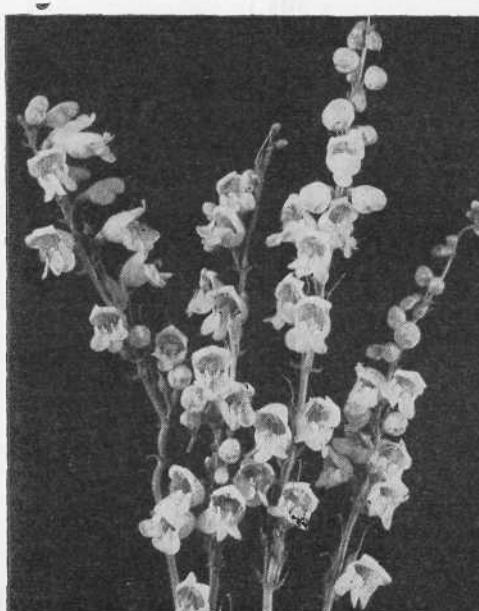
Blue Beard-tongue (*Pentstemon spectabilis*). Photographed by the author in southwestern Mojave desert, California.

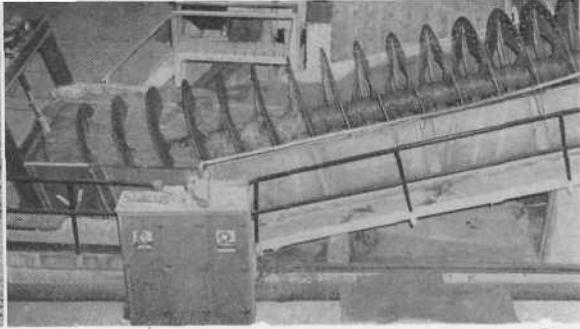
Arizona, southern and eastern Mojave desert and along the western edge of Colorado desert from April to June.

Pentstemon pseudospectabilis

A beautiful plant with several erect stems up to 4 feet tall, the oblong-ovate leaves sharply serrate, the corolla about an inch long, gradually inflated to the spreading lips, bright pink to rose-purple. Common in sandy washes and open ground up to 6500 feet in mountains of eastern Colorado desert, Arizona and southwestern New Mexico, blooming in spring and summer, according to altitude.

Left to right—Scented Pentstemon (*P. palmeri*), a favorite of honey bees in eastern Mojave desert. Bushy Beard-tongue (*P. antirrhinoides*), specimen from Providence mountains of eastern Mojave desert. White-margined Pentstemon (*P. albomarginatus*), usually growing in drifting sand. Photographed specimen from a colony found by the author near black lava bed surrounding Pisgah Crater.





Left to right. 1—The prospector, daring desert heat and endless miles of hills and sand, deserves credit for locating the great deposits of magnesite from which magnesium is made. Photo by Truman D. Vencill. 2—Magnesite blasted out with dynamite is scooped up with big shovels, dumped into specially designed trucks which carry 20 tons of ore each, in steady stream to Gabbs plant, from where magnesium oxide and other concentrates are hauled to plant at Las Vegas, 334 miles away. 3—Ore is pulverized in a battery of ball mills (center), then moves to classifiers (foreground). Finer material flows out and is carried to the next operation.

Miracle Metal From Nevada Hills

By LELANDE QUICK

Photos courtesy Basic Magnesium, Incorporated

"THE romantic thing to me is that the plant stands squarely astride the old Spanish trail so that I like to refer to it as the Path of Progress." Guernsey Frazer, administrative assistant to the general manager of Basic Magnesium was talking to me as we looked over the enormous plant at Henderson, Nevada.

"That idea pops into my mind oftener than do the facts that confront us daily, such as how we built this third largest city in Nevada in 11 months to house the 5500 permanent workers we now have at BMI—a town complete with hospital, schools, churches, markets and a general shopping center. Construction of the plant itself over a period of only 18 months was the largest construction job ever accomplished in four directions—in refractory brick work, sheet metal, electrical and plumbing installations. It was built by McNeil construction company of Los Angeles between November 15, 1941, and July 31, 1943."

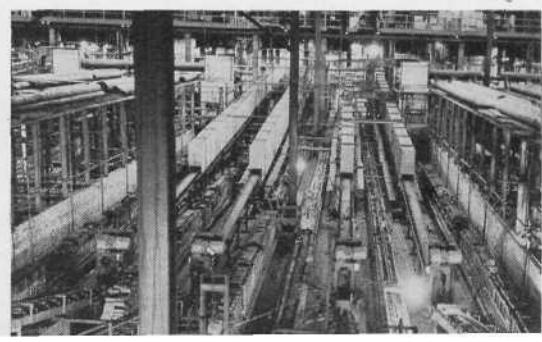
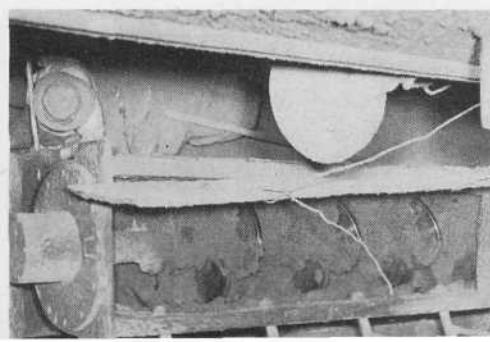
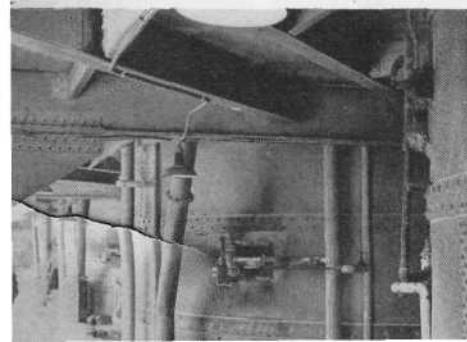
I had spent the whole day with Bill Burke, Frazer's able assistant. I wasn't too tired, for the buildings were so large we had driven right through most of them in our car. Silver-like magnesium has been aptly called the miracle metal. Its use is comparatively new because it used to cost \$5.00 a pound to produce it but now it can be turned out for about 20 cents. Magnesium is about two-thirds the weight of aluminum but it has the tensile strength of hot rolled or mild steel. Its potentialities for postwar use are unlimited for making the standard things lighter—washing machines that will weigh less than present vacuum cleaners, bath tubs that one man can easily carry. And because it is cheaper to produce, the cost of items made from it will be reduced in two directions for it is an axiom in the metal industry that "if you save a pound you save a dollar."

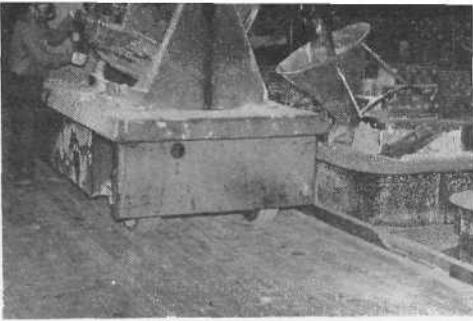
BMI, as they always refer to Basic Magnesium, Inc., is the largest magnesium plant in the world, using more Boulder

Dam power daily than the city of Los Angeles. It cost more than \$140,000,000, and beside it other war plants authorized by Defense Plant corporation were really minute. The electrical installation alone cost \$40,000,000. Of this amount \$23,000,000 went into solid silver bus bars. All of this silver had been mined in Nevada and stored in eastern vaults at West Point, New York, but because of the acute shortage of needed copper, usually used for bus bars, the silver was processed into equipment in the east and came home again to Nevada as a substitute for the copper bars in six of the ten electrolysis units now operating at the plant.

Aside from the cold and unromantic statistics of the accomplishment the real romance was in the successful fight of more than 13,000 construction workers (Boulder Dam had but 5250 at the peak) to accomplish their purpose in the face of natural difficulties and lack of living quarters. With the combination of natural

Left to right. 4—In battery of roasters magnesium oxide is calcined. Partially moist magnesium oxide, introduced at top of these seven-story units, is subjected to intense heat generated by oil burners. Last process at Gabbs mill. 5—One of a battery of wet mixers in which coal, peat moss, magnesium oxide, magnesium chloride are mixed. From mixture cakes of magnesium are extruded, cut into slabs by piano wire. 6—Here cakes of raw materials pass through long tunnel kilns, thoroughly dried. Process consumes some of the coal and peat moss, leaving cakes porous.





Left to right. 7—Cakes of raw materials after being conveyed from oven kilns. From here they are conveyed to crushers which break them into small pellets, which go to chlorinators where magnesium oxide is transformed into magnesium chloride. 8—From chlorinators molten magnesium chloride is carried in electrical jeeps and poured into cells. In cells are other chlorides. Direct current of high amperage, low voltage, passes through. Electro-chemical action causes metallic magnesium to rise to surface, while chlorine passes out to be re-used in process. 9—From electrolytic cells metallic magnesium is skimmed from top and poured into pots. Worker at left is ready to sprinkle flux in pot in case molten magnesium catches fire. There are 880 of these cells at Basic plant, in operation 24 hours a day, 7 days a week.

and man-made hazards a world safety record was established despite 75,000 recorded accidents which resulted in but ten deaths. That many fatalities reasonably could occur in any community of 10,000 persons following normal pursuits in an 18-month period. Never had there been a more concentrated effort to whip the immutable forces of the desert to make it serve man.

They tell you at BMI that while the magnesite ore exists all around them they get it from deposits nearby that had been worked earlier. "Nearby" is the Gabbs valley, 334 miles northeast of the plant. The Pacific ocean is the same distance from BMI! But distance is not the tangible thing in the desert that it is in cities. A few hundred miles of desert is not awesome to a man working in a plant so large that one section of it has more than 50 buildings in a row. Gabbs valley contains mountains of magnesite ore which is crushed and processed into magnesium oxides and other concentrates at the mine and then hauled in huge trailer trucks south to the plant at BMI which is 15 miles east of Las Vegas.

There are other magnesium plants in the country but they recover the magne-

sium from sea water. Only BMI uses the electrolysis process, through a strange combination of circumstances. Germany first developed the process and then she helped England build a plant at a time when her purpose was to keep England stronger than the France she feared and believed strong. Later England needed our magnesium and through lendlease arranged to pass along the secret to us in exchange for the incendiary bomb material. The magnesite of Gabbs valley in the desert drops on the cities of Europe almost nightly to destroy the factories producing materials for the enemy.

Frazer continued his conversation as we sat in his office at the end of the day. "I always have been a close student of Nevada history and as near as I have been able to learn, Father Silvestre Velez de Escalante was the first white man to go through here. He made the trail through these *vegas* or meadows in the summer of 1776, the trail that later was used by Jed Smith, Jefferson Hunt and the first occupant Bringhurst, sent down here by Brigham Young in 1855.

"The founding fathers in Philadelphia, ringing their liberty bell at almost the same hour, did not dream of this vast land being

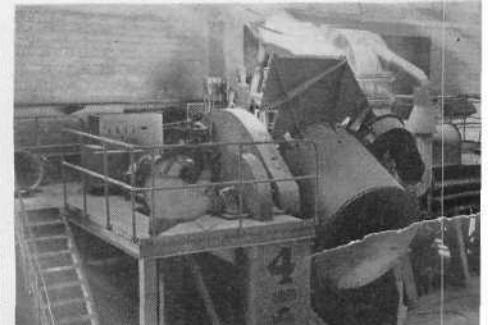
explored by Escalante, a land whose magnesium would one day help save the liberties they were founding. Ever since then we've celebrated the 4th of July and the fireworks have been steadily improved in magnificence due to magnesium. But now, with cheap production of this flare material, a community need only spend a hundred dollars for an evening of fireworks where it used to spend a thousand."

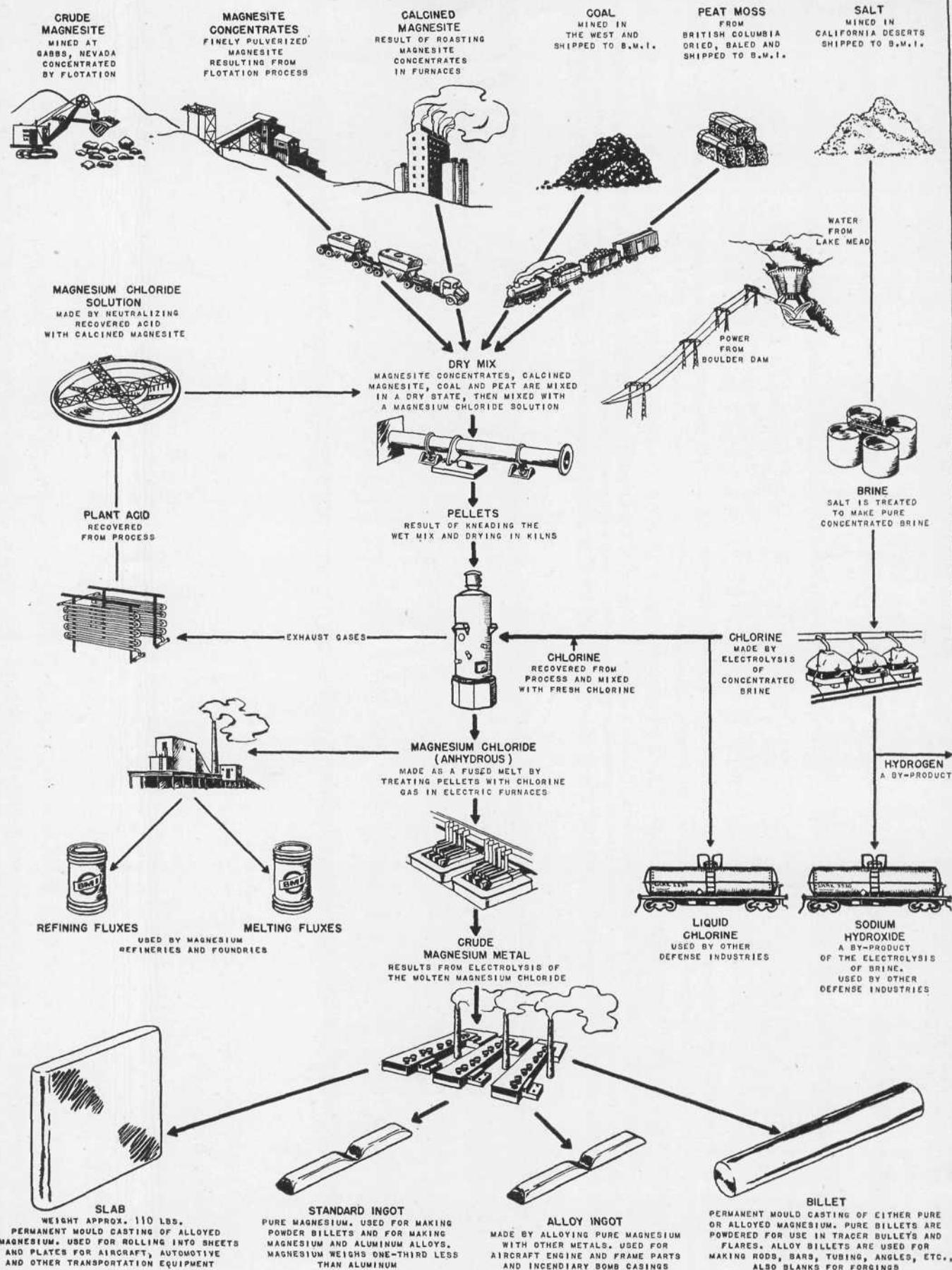
"Just why did you build at this spot?" I wanted to know.

"We had to use Boulder Dam power and Lake Mead water—lots of it, and it was better to bring the ore to the power and water than vice versa. We had many unique problems to solve here, but the strangest of all was that mortar set too fast on the bricks for the furnaces, or refractories as we call them. In these desert temperatures the mortar became as hard as a bride's first cake in less time than it takes to say BMI. We solved that problem by mixing mortar in ice cream freezers."

"Yes, I read about that," I said. "I saw the special ice plant you built for the purpose. Bill Burke was telling me how the mortar hardened like glass so that it was air tight, acid tight, current tight, gas

Left to right. 10—After molten white metal is ladled from cells into pots, it is poured into containers as shown here. 11—Magnesium "cheeses" go into crucibles at BMI refineries, where other alloying metals are introduced. Various alloys are made—for incendiary bombs, sheet magnesium, airplane parts, tracer bullets, flares. 12—Crucibles of still-hot magnesium alloy go into ingot pouring machine which is kept hot by gas flames, tips automatically, keeping outpoured magnesium alloy flowing steadily into moving molds. Ingot molds move down line to right, cooling as they go. At end, they drop into bins—a finished product.





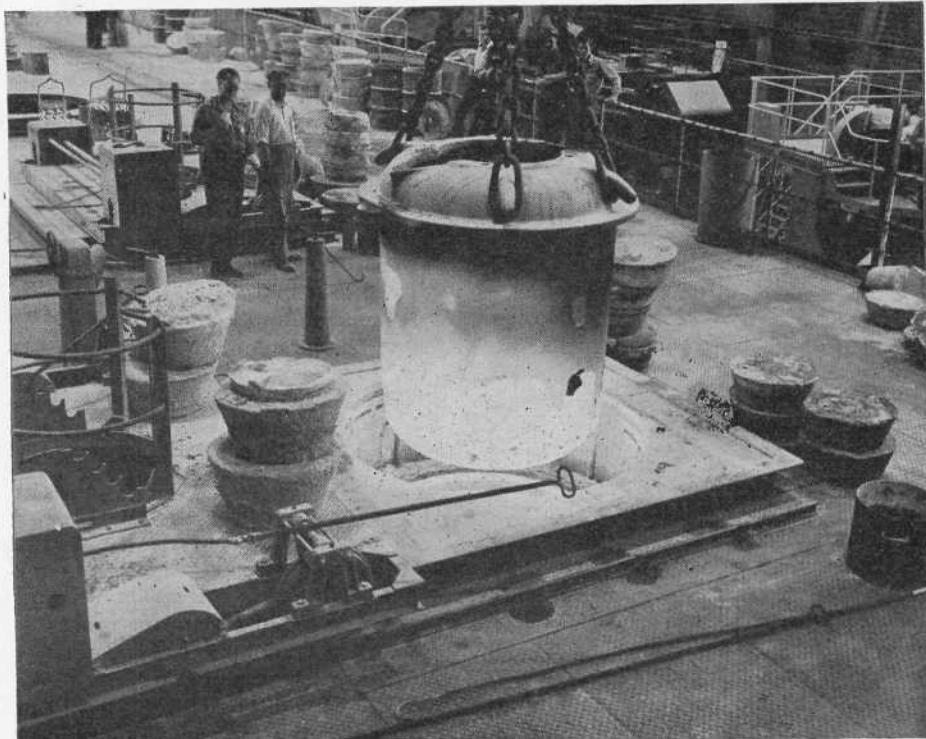
Nevada's Light Metal Industry

How Basic Magnesium, Incorporated, turns Nevada's raw materials into strategic magnesium products which are used around the world in the Allied cause.

tight and corrosion resistant—and that's tighter than a funeral drum, I guess."

And then Frazer asked me, after I had peered into every tunnel, furnace and laboratory for eight hours, if I knew what was going on at BMI. "No," I said, "what do you make?" After the loudest guffaw ever heard in southern Nevada the genial Frazer said, "Tell him again, Bill. He's seen so much today we've got him dizzy."

"Well, I helped string up the first power line here," Bill Burke replied, "but I vaguely understand it all myself. After we get the materials in from Gabbs, the magnesite concentrates, calcined magnesia, coal and peat are mixed in a dry state and then mixed in a solution of magnesium chloride. After kneading the wet mix and drying in kilns the material is made into pellets. Then anhydrous magnesium chloride is made as a fused melt by treating the pellets with chlorine gas in electric furnaces. Crude magnesium metal results from electrolysis of the molten magnesium chloride. From this we get slabs for rolling into sheets and plates for aircraft, automotive and other transportation equipment. Then we get a standard ingot for making powder billets and magnesium and aluminum alloys. The billets are powdered for use in tracer bullets and flares. We also make alloy ingots for aircraft engine and frame parts and for incendiary bomb casings. It's a big step from the first magnesium used in the flash when



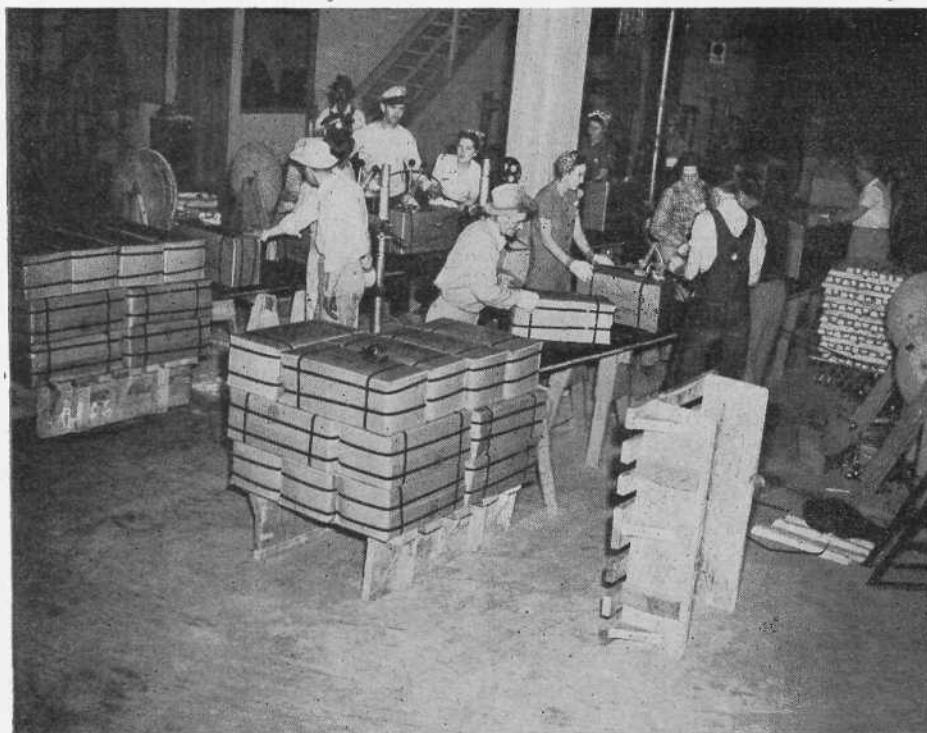
Crucible, loaded with two tons of white hot magnesium alloy, has been lifted from gas furnace by overhead conveyor in one of the three BMI refinery units. It is being lowered to cooler before being sent to ingot-pouring machine (See No. 12).

grandma had her tintype taken—but it's not so complicated, is it?"

"Simpler than the solar system," I replied.

"We get a lot of things besides magnesium, too," continued Bill. "See those big tank cars? They're super-thermos bottles.

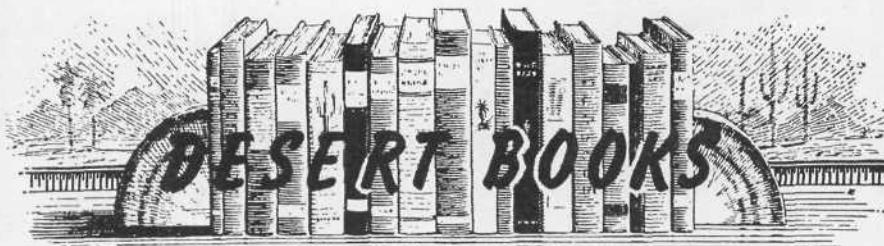
In shipping department, finished ingots are strapped with steel and packed into cardboard cartons for shipping.



We load them with liquid chlorine and they are lined so that the contents never vary more than ten degrees while in transit regardless of the outside temperature. That goes back to Pittsburgh to make glass. Then we get sodium hydroxide as another by-product of the electrolysis of the brine. This is used by many other defense industries. We use mountains of salt from the deserts roundabout to make the brine and we couldn't get far with our ore if we didn't have all this water, salt and electricity we get near the plant."

Then I asked Frazer what postwar would mean to BMI. "It will mean many things," he said, "but this is no 'war baby.' Magnesium will be in terrific demand for postwar recovery and industries."

Even so, the possibility of a shutdown is a real nightmare to every BMI employee. But the Anaconda Copper company, greatest name in metals, operates BMI and they have an easily understood urge to do to aluminum what aluminum did to copper. Whatever happens two things are practically assured—the metal business will be revolutionized and the desert will be industrialized. They brought the cotton mills to the cotton fields and the romance of the deep South faded. Now they bring the furnaces and foundries to the ore deposits of the deserts, but we hope that at least the peace of the desert will not be too disturbed.



AUTHENTIC BONANZA HISTORY PUBLISHED BY MINES BUREAU

THE HISTORY OF THE COM-
STOCK LODGE, by Grant H. Smith, is a
comprehensive mining history of the Lode
from 1850 to 1920. For the experts or
specialists it contains a progressive record
of the development work carried out, the
failures encountered, the bonanzas discovered,
and the production reports of the
mines. But for the layman the work is as
absorbing reading as fiction.

The rise and fall of fortunes in the roaring
days when the Lode was most active,
and the personal lives of the men who de-
veloped it color each page of this chronicle.
Historically exact and authentic in every
detail, it is fascinating reading because it
tells the story of one of the most romantic
and brilliant periods in American history.

Publication of Nevada State Bureau of
Mines, 1943. 290 pp. Appendix, produc-
tion records, illustrations. Spec. ed. for
Nev. residents, 75c. Library edition,
\$2.00.

—A. M.

SPANISH LANGUAGE GUIDES FOR THE ARMY AIR FORCE

CONVERSATIONAL SPANISH, by
Solomon Lipp and Henry V. Besso, was
especially written for the army air forces of
the United States, but can be just as useful
to the civilian. Special words, useful to
the flyer only, are common throughout the
book, but these can be omitted by civilians,
or others substituted from the vocabulary
with good results. The thousands of other
idioms, words and expressions easily can
be used by anyone. The simple construc-
tion and direct method make the book one
of the best for an earnest beginner. Cloth-
bound, \$1.25; paper, 75c. 6x9 inches, 168
pages.

CONVERSACION, by H. V. Besso and
S. Lipp, is a more advanced book, to follow
the completion of Conversational Spanish,
especially for use of both army and navy.
The story and cartoons are amusing and in-
teresting enough to lead the advanced student
from lesson to lesson. The book also
contains much valuable information on
Spanish America, vocabularies, grammar
review and all necessary material for a real
student. Cloth \$1.50, paper \$1.00. 6x9
inches, 294 pages. Both titles published in
1943 by Hastings House, New York.

—Arthur L. Eaton

STUDY DISCLOSES NEW PUEBLO INDIAN CRAFT

PUEBLO INDIAN EMBROIDERY, title of volume four of Memoirs of the Laboratory of Anthropology, Santa Fe, New Mexico, will come as a surprise to most readers. Although it is well known that weaving of textiles is one of the crafts of the Hopis of northern Arizona and other Pueblo tribes of New Mexico, examples of these textiles embellished with embroidery are rare. During his intensive search for material on this subject, the author, H. P. Mera, found less than 100 examples dating prior to 1880.

This craft is believed by some to be of prehistoric origin, by others a result entirely of European influence. Mera gives evidence supporting both theories, but concludes that present knowledge cannot prove either theory, although he would tentatively accept an aboriginal origin in the Southwest, at least as early as the twelfth century.

Most of the 73 pages of the monograph are devoted to a study of the embroidery style and technique on both cotton and wool fabrics. Twenty-six page plates, three in full color, show both embroidered garments and remnants which have been found in ancient Indian dwellings, and many detailed studies of specific designs.

Altogether, this is an unusual and interesting study, despite scarcity of material. Since it is doubtful much additional material will be uncovered, this presentation of the subject in monograph form at least calls attention to another American craft which can take its place beside those of pottery-making, weaving and silver work.

WHEN LAW WAS MADE BY MEN QUICK ON THE DRAW

When Frank Goodnight rode into Sherman City on an errand of personal revenge he discovered nearly everyone in the cattle community belonged to one of two rival law-dispensing factions from which he could not remain free. As one oldtimer put it, "I guess I'm the only one in town that ain't lined up." Personal motives are interwoven with those of the rival desert and hill cattlemen to make Ernest Haycox' THE WILD BUNCH a tense emotional story of conflict in the Old West. Published by Little, Brown, Boston, 1943. \$2.00.

BOOK'S THEME IS INFLUENCE OF INDIANS ON WHITE BOY

Charles B. Nichols, author of latest book-of-the-month, CRAZY WEATHER, writes of a subject he knows well when he describes the life of a young white boy who is brought up with and influenced by contact with southwestern Indian tribes. Mr. Nichols himself was raised on 11 different Indian reservations where his father was a special agent for the U. S. department of interior. The author has used his special, intimate knowledge of Indian life, character and customs in writing one of the most interesting and original stories that has been produced in some time.

South Boy, young son of a white cattle-
man, spent a lonely childhood in the
partially uncivilized and wholly forsaken
regions along the Colorado river. Most of
his time was spent among his Mojave
friends who accepted him as an equal and
initiated him into their tribal lore and
superstitions. His education, consequently,
was a peculiar mixture of redmen's doc-
trines and what his dainty mother referred
to as Cultural Advancement and Christian
Instruction against Rough and Heathen
Worlds!

The plot of CRAZY WEATHER con-
cerns itself with the development of South
Boy's character and attitude—the resolv-
ing of his mind from confused loyalties to
courageous, purposeful decisions. He runs
away from home to join a Mojave war
party heading south to fight the Piutes in
the blazing heat of summer. Through
these brief, strange events South Boy
emerges a man.

Refreshing elements in the book are its
complete lack of any "love interests," its
frank simplicity and its very natural and
responsive dialogue. Macmillan Co., 1944.
\$2.00.

—Alton Marsh

THE FANTASTIC CLAN



As enjoyable as a
good travelog.
Tells you how to
"call by name" the
odd members of the
spiny clan of the
desert.

THE FANTASTIC CLAN by Thorner and Bonker, describes with charm and accuracy the strange and marvelous growth on the desert. An informal introduction to the common species in their native habitat, including notes on discovery, naming, uses and directions for growing. Many excellent drawings, paintings and photographs, some in full color. Endmaps, glossary, pronouncing vocabulary, index.

\$3.50

DESERT CRAFTS SHOP
636 State St.
El Centro, California

"The desert is still waiting for you . . ."

(AN OPEN LETTER FROM JOHN HILTON TO RANDALL HENDERSON)

Thermal, California

Dear Randall:

It seems a long time to us since you left the American desert for the African but I imagine it seems even a longer time to you. The last I heard from you, aside from your editorials, was at Christmas time. The other day I got to thinking of what you must be wondering about the desert and the changes on it. So I decided to sit down and write a sort of general report on the part of the country that you and I have traveled together.

You probably remember that when General Patton and his desert troops were coming into this area, I spent a great deal of time with the army as an unofficial guide to more or less orient them. I went on some mighty wild and interesting rides during that time in everything from a peep to a tank. I helped locate roads, maneuver areas, ranges and targets, gave talks to groups of officers with slides from my collection and in any way I could, helped

them to become acquainted with desert ways. It was hard work at times but a lot of fun. I met a great many fine men, from generals to buck privates, and I wouldn't have missed it for anything on earth.

Then the calcite deal opened up. Suddenly we found that there was a crying need for this material and we had one of the three potential producing properties. I dropped everything to mine calcite—even to writing for the DM. We tried keeping the shop open for awhile but soon Eunice was too busy with company business to do it justice so we closed up for what we thought would be the duration.

Capital had entered into the picture by then and with more good intentions than sound business judgment I turned the property over to others and worked for a salary. One day I took one of those crazy falls, that a fellow can, when my feet slipped out from under me on loose rock. The next morning I could hardly walk and my shoulder and neck were one solid pain.

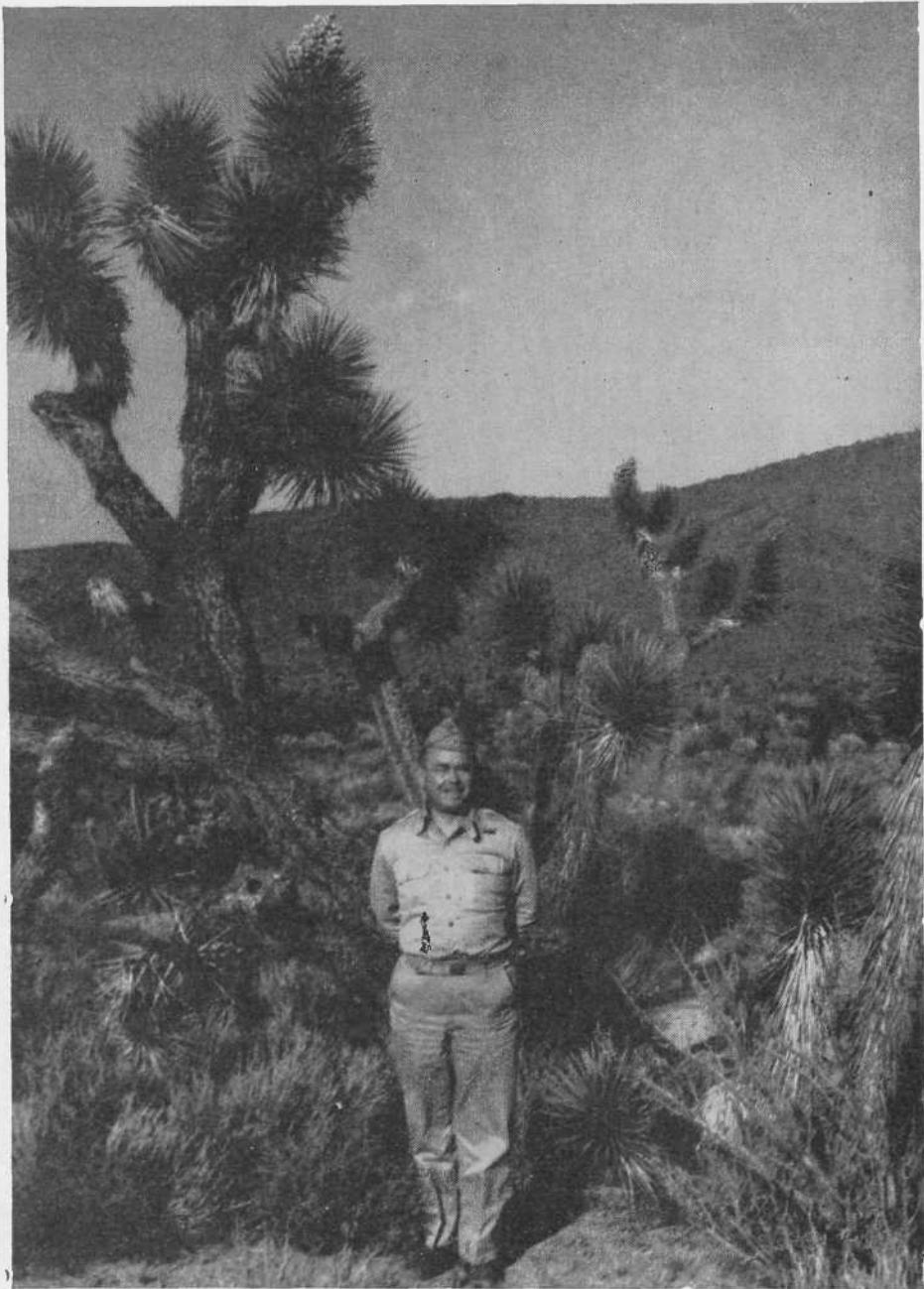
Several different doctors tried to help but the darned thing didn't get any better. Then finally they decided that I had injured the main nerve in my left arm and shoulder. I worked for several months with an arm in a sling and was never without considerable pain until just recently. At one period I lost the use of the hand for as long as a day at a time.

We got the calcite out, however. That was the important thing. We mined crystals that would have been prizes in any museum in the world but this is war and they all went into making the still secret instrument that has saved so many lives and so much equipment.

Then one day we failed to bring any crystal off the hill. The day stretched into a week and we kept thinking that one of the crews would strike a good pocket but they just didn't. Production was pretty slim for some time and the summer heat weakened the morale of the men, including the various "experts" they sent out to study

"Snow incrusted the north side of every rock, palm tree, cactus and even the bright colored wildflowers."





"Colonel C. T. Senay, commanding officer of Camp Young, has learned to love the desert and hopes to come back when the shooting is over."

the problem at a low ebb. At about this time a possible synthetic substitute loomed on the horizon and another mine struck a rich pocket. The camp was abandoned, machinery sold and I was out a mine and a job. And with an arm I couldn't use very well.

We finally got readjusted. I sold a couple of paintings and opened the shop again. My arm seems wholly to have recovered and now we are doing pretty well, thanks to a good DM friend, Mr. J. L. Kraft, who found a wonderful stock of old jewelry that had been in storage since the days of tintypes. These brooches and pins look wonderful set with desert stones, and sell like everything. We've been doing little but cut and polish and wholesale these

pieces of jewelry to get on our feet again and when I say we, I mean the whole family. Eunice and Philip (who is 15 and over six feet tall) both have learned to polish and Katherine (she's five now) gives "expert advice" from the side lines.

I have started again helping the army a little, only this time it is in moving out instead of into the desert. The officers in command at present are conscientious in their desire to see that the desert is left as near the way they found it as possible. I have been going along on inspection trips over the area with Colonel Senay and several members of his staff.

These trips have taken me back into many of the favorite haunts that you and I have enjoyed together. For instance, the

other day we were in the upper end of Lost Palms canyon in the Eagle mountains. There had been a freak snow storm in the hills the night before and the canyon was a beautiful sight. Snow incrusted the north side of every rock, palm tree, cactus and even the bright colored wildflowers. I shot a whole roll of Kodachrome. The wash has been heavily traveled and the foot trail to the palms well worn. There must have been as many men in this one remote spot in the past two years as there have since the dawn of creation. Yet I can truthfully say that the canyon is as lovely and unspoiled as ever. Not a palm has been mutilated, not a tin can or bit of rubbish was to be seen.

For every careless hand that would leave such things there are crews everywhere now burning and burying and cleaning. I know that you won't be disappointed in Lost Palms canyon on your return.

On the way down, the snow had melted and I could see the green tips of new orchid shoots coming through the reeds by the tiny creek bed. I called the colonel's attention to them, saying this was the only place on the desert where I ever had found this little wild orchid. He found it hard to believe that they really were orchids until I discovered some of last year's flower stems with the pods still intact. Colonel Senay has served in Panama and other jungle countries and is an observant man. He had to admit they were orchids. The driver, a boy from the Middle West, went home muttering about a country where orchids and palm trees were covered with snow.

One other day we crossed the Little Chuckawalla mountains on one side of the wide graded roads the army has built right across this range of hills—from highway 60-70 to the Niland road. We stopped to eat lunch (after a good bit of maneuvering on my part) near one of my old geode fields. Heavy rains and a complete lack of rockhounds have combined to make picking mighty good. We all gathered rocks for awhile and now I am afraid the whole staff is turning rock conscious. Especially after they saw some of the green moss agate polished. When the war is over there will be literally dozens of swell gem fields to map for the DM with passable roads to within easy walking distance.

One other day in the Chuckawallas the colonel called from over the hill and we all converged to see what was wrong. There was a shaft someone had sunk on a small manganese vein and at the bottom was a desert tortoise, the first of the season we had seen. He had fallen in unhurt but was unable to get out of the vertical pit. He would have starved down there walking helplessly round and round the bottom so I climbed down and got him out. We soon found another and the discussion

turned to tortoises. The colonel and three of his officers who were along at the time were interested. They hadn't heard of the law protecting them but thought it was a mighty good idea. I am sure it will please you and Steve Ragsdale, not to mention thousands of other desert folk, to know that the word is being quietly passed around among the men in the hills that there is a law against harming desert tortoises and besides, "the C.O. likes 'em and says they're to be let alone."

Salt Creek wash, between the Orocopia and Chocolate mountains, looks just like it always did except that the gravel is strewn with shell cases from aerial machine guns. The bloodstone deposit I wrote about in the March, 1938, DM, looked no different than it did when I saw it a few weeks before Pearl Harbor. A few soldiers who read back copies of Desert magazine have collected samples. But one good thing about G.I. collectors, they can't carry much with them and are happy with a piece or two of each kind. I only hope that the rush of civilian collectors into these areas after the war are equally considerate of one another and the country.

Tabaseca Tanks in the north end of the Chuckawallas is as lonely a spot today as the time Zane Grey camped there while writing "The Wanderer of the Wasteland." There are tank and half-track trails around the base of the flats and jeep tracks in every wash, but the quail still call in the canyon and the roadrunners go on collecting lizards as if a mock war never had been fought in their back yard. There is a good gem field in this area which I will map as soon as gasoline is unrationed.

Last week we took two peeps into the Turtle mountains and checked that area. We turned off about where I marked the rose quartz and chalcedony along the road from Desert Center to Parker in the February, 1941, DM. But instead of stopping near the highway as the map showed, we followed military trails right into the heart of the Turtles to see if the area had been properly evacuated. We stopped in my old gem field long enough to see that there was still plenty of good rose quartz pebbles and chalcedony to be had but we found armor-piercing machine gun slugs from aerial gunnery scattered about with the gems. We went right into the middle of the Turtles one way and came out another over a terrain that three years ago would have seemed impossible for wheeled vehicles. It took a good deal of hanging on and many times we were in low gear with four-wheel drive.

We made three discoveries there. The area had been pretty well covered by military equipment during desert maneuvers but camps had been carefully cleaned up.



"Wildflowers always are the thickest and brightest where the desert crust has been broken, and these tracks left by a caravan of military trucks stood out as if they had been painted by a giant brush across the sand."

We found a wonderful field of chalcedony and carnelian on the slope of a huge butte, and hidden up an easily missed side canyon we found a "California" giant cactus over 30 feet tall. This huge monarch stood all alone, the only saguaro for many miles.

It is no longer a military secret that desert training is coming to an end. Area after area is being evacuated and where once thousands of lively soldiers camped, the coyote and desert fox roam untroubled and great desert tortoises are emerging from their holes to find that winter and

mock warfare have passed harmlessly overhead.

There naturally has been a certain amount of damage to both plant and animal wild life, but everything within reason is being done to leave the desert as the army found it. Drivers at first thought it was fun to run half tracks over ocotillos and small trees but soon they found that almost everything on the desert bites back and it is better to go around. Some areas are literally plowed by tanks but for every plant that was destroyed a hundred are

"Major Cowden is a fine campfire cook, who 'sets the table' on the hood of a jeep. He's one of the officers who has really learned to like the desert and hopes to come back to it."



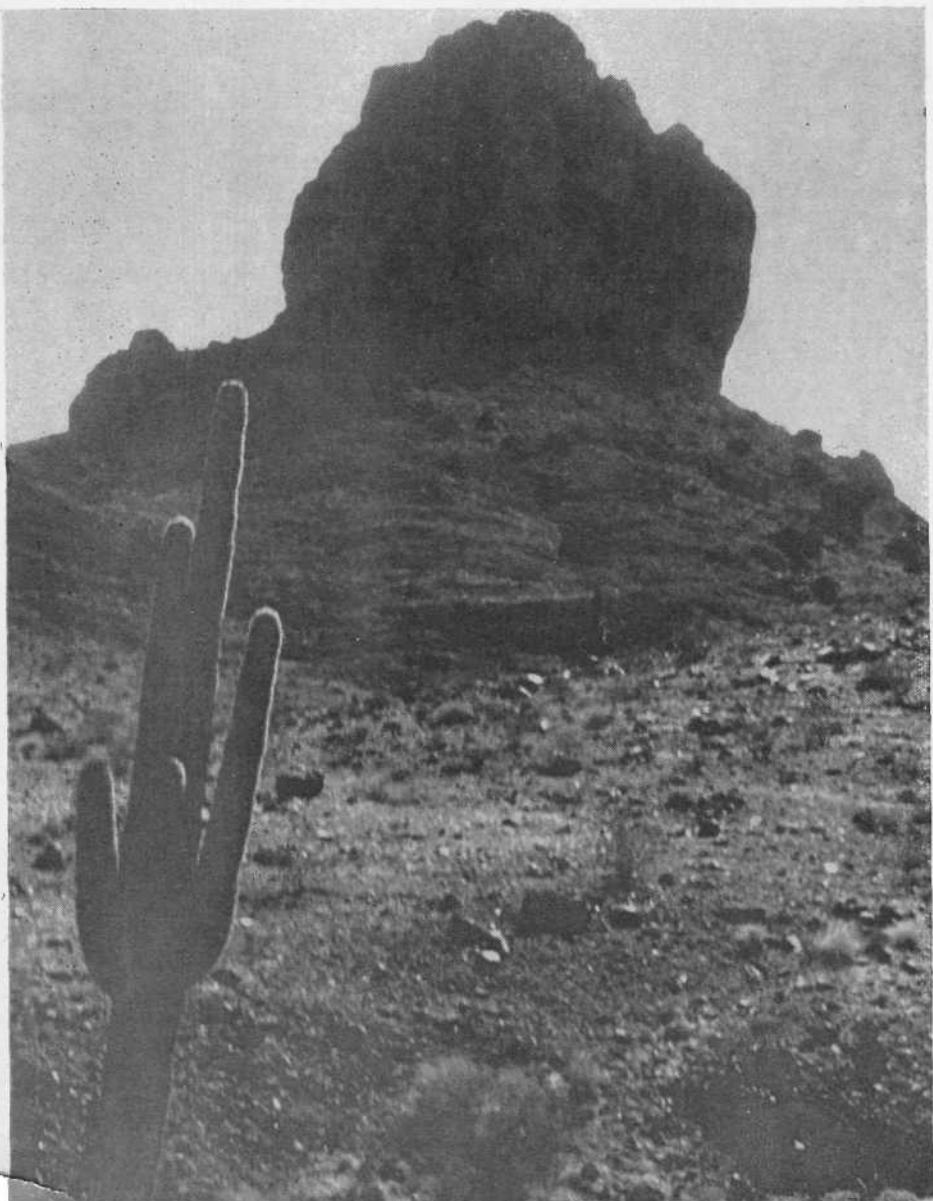


"The army peep is a rockhound's dream. Here one breaks a new trail in the Chuckawallas."

springing up since this winter's heavy rains.

If you will remember, the wild flowers always are the thickest and brightest where

the desert crust has been broken. The graded sides of a road are invariably two bright strips of taller and larger flowers across the desert in the spring, for the



breaking of the crust has planted the seed better and allowed more rain to get deep into the sand. The same thing has happened where desert maneuvers have taken place—only on a grander scale. The annuals are not the only ones to get a new impetus. Young smoke trees, ironwoods, ootillos and even barrel cactus are springing up all over such areas. Last week I took a photo which illustrates my point perfectly. A wash was sprinkled with about an average crop of desert flowers except the path that had been made by a caravan of military trucks. These tracks stood out as if they had been painted by a giant brush across the sand.

I am writing you this because there are a good many "sob sisters" of both sexes making quite a thing of how the army is "wrecking our dear desert." These folks, for the most part, don't know the desert very well or they would not be so concerned. You and I know that the desert is tough and adaptable. That it has been "torn up" by other hoards at different times and that today a few peaceful old ghost towns are the only evidence of all this activity. The desert is mighty hard to spoil. It's too darned big and resilient. It is going to take more than a war to destroy its peace and beauty.

There are thousands of officers and men who trained here who have learned to like it and have a great respect for this land that others think is such an awful place. The average of those who like the country and intend some day to come back and show it to their folks is about the same as always, but the volume has been great. Hundreds of thousands of men from all walks of life and every part of our land have gone through training courses in our desert. Out of them will come thousands of boosters and others who will come to live and build up our young communities.

I'm going out to hunt calcite next month if my ration board approves. I have several good leads and a lot of experience from the last mine. It still is one of the top strategic minerals. I hope also to have time to get out a few articles for the DM.

Yes, Randall, the desert you love is still waiting for you. It hasn't changed a great deal and probably never shall, and the folks out here can hardly wait till you get back to enjoy it with us.

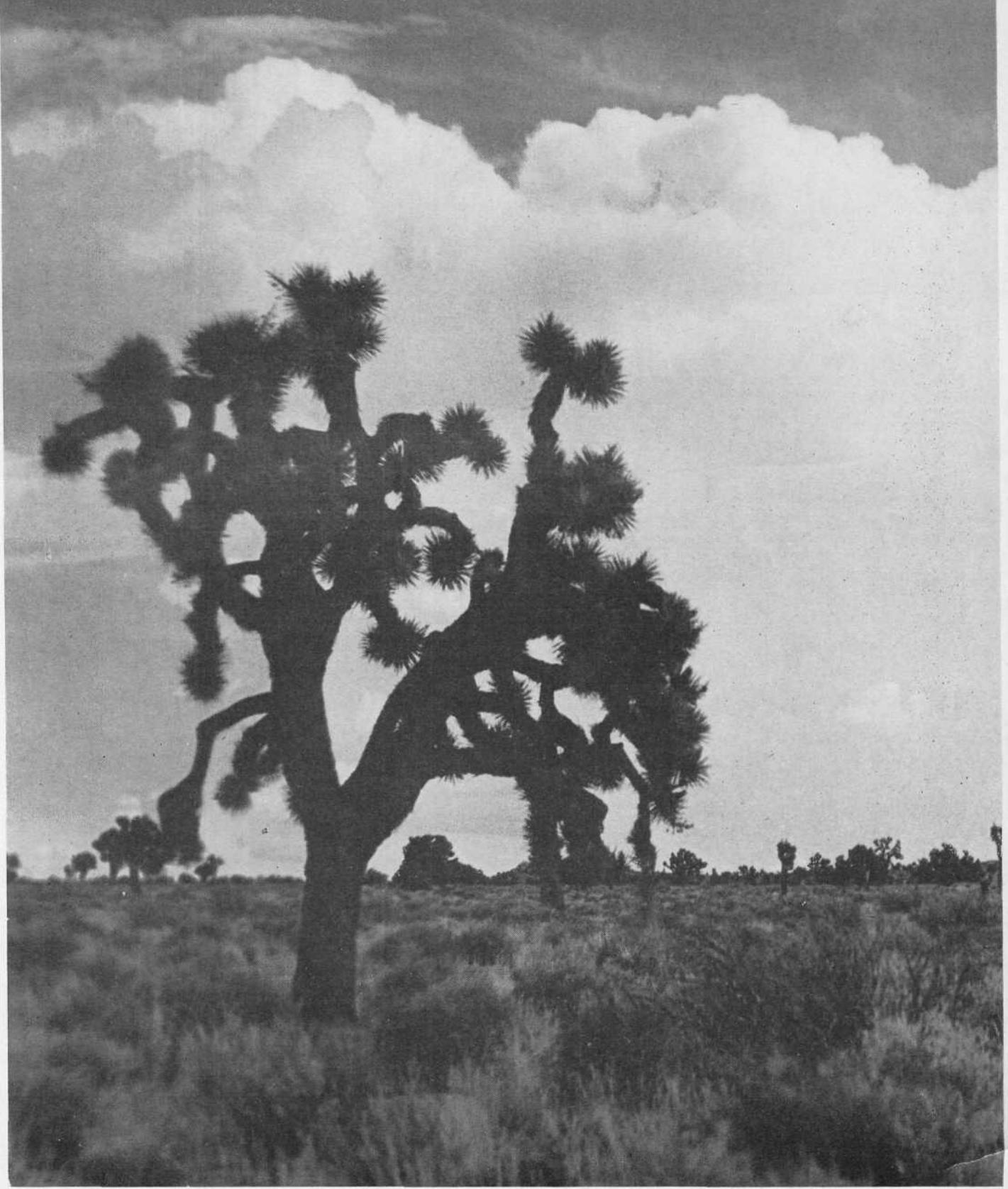
As Ever, Your Friend,
JOHN

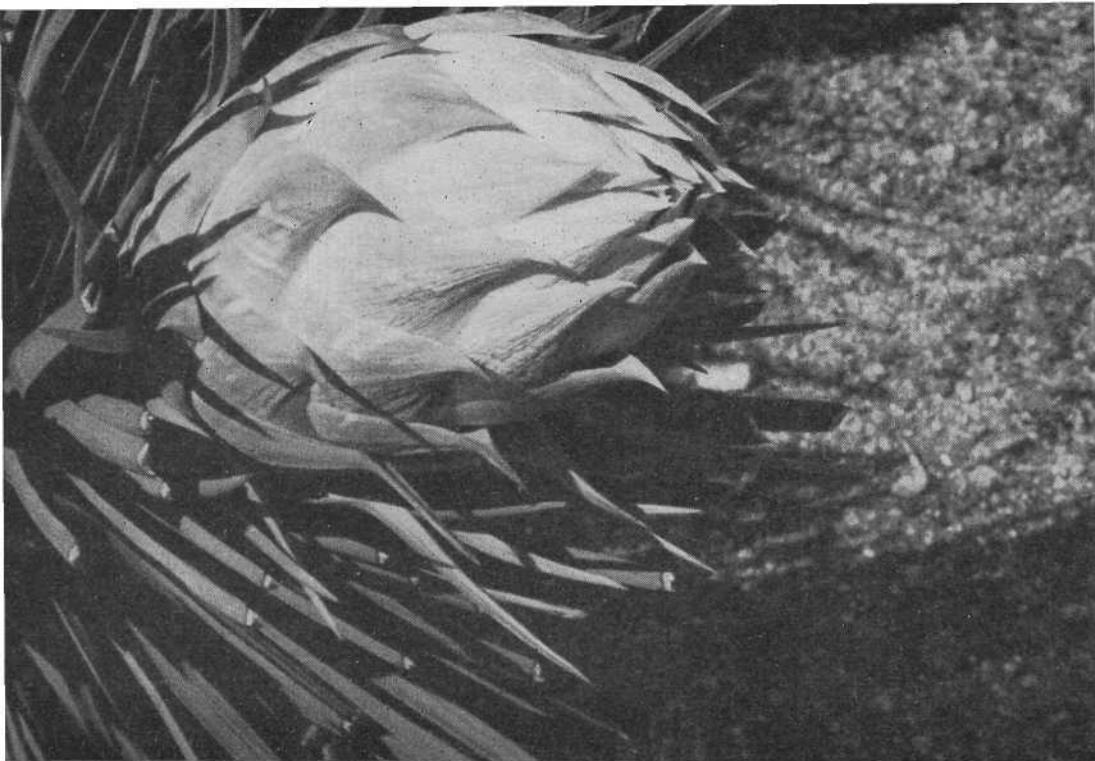
P.S.—I'm enclosing some of the pictures we took on these recent trips.

"In the heart of the Turtle mountains we found a saguaro cactus over 30 feet tall, despite the fact it is supposed to be confined to the Arizona side of the Colorado river. This country looks like a combination of Monument Valley, Utah, and the cactus country of southern Arizona."

Mojave's Giant Lily

By CATHERINE and DICK FREEMAN





1

PICTORIAL RECORD OF JOSHUA TREE BLOSSOM

Photos and text by Catherine and Dick Freeman

Fossil remains discovered outside the Joshua tree's present limits in California, Nevada, Utah and Arizona, indicate that in earlier, more humid ages it had a much wider distribution. Catherine and Dick Freeman, in photographing this series covering early bud stage, full flower, developing and maturing of fruit, to final skeletal period, chose as their subject the *Yucca brevifolia*, or short-leaved species. Close-ups of the flowers were taken 20 miles west of Lancaster, California. Besides the yucca moth which effects its fertili-

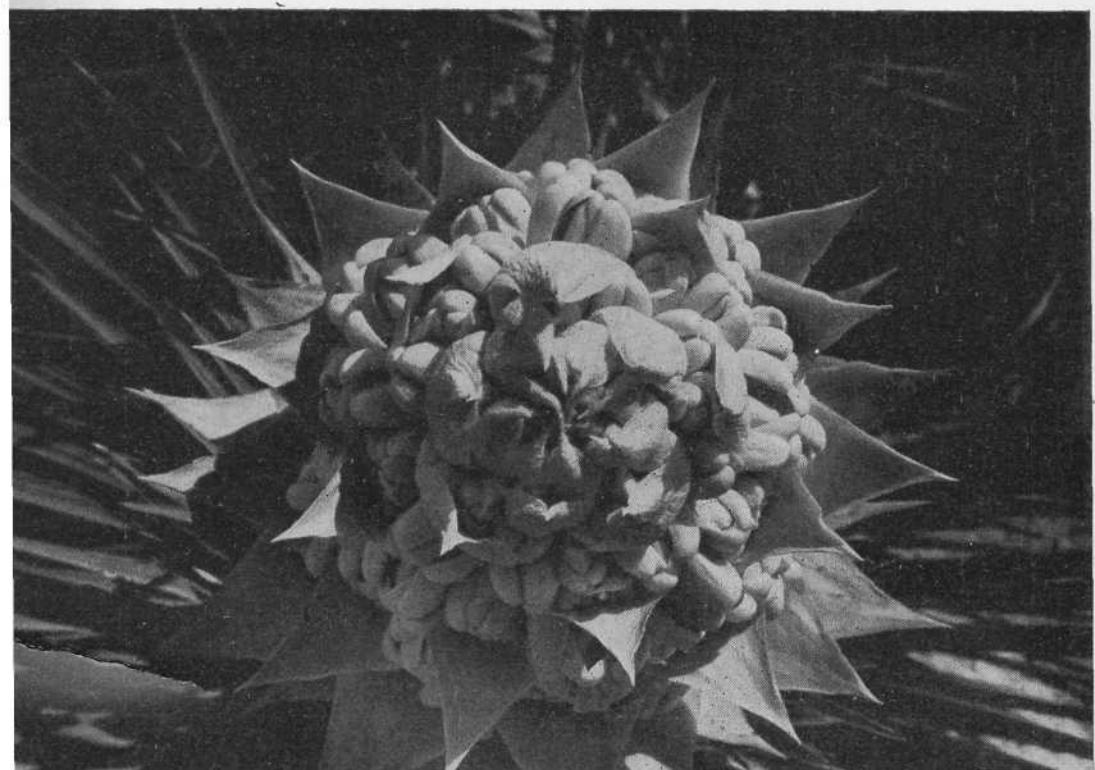


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Title photograph by F. V. Sampson

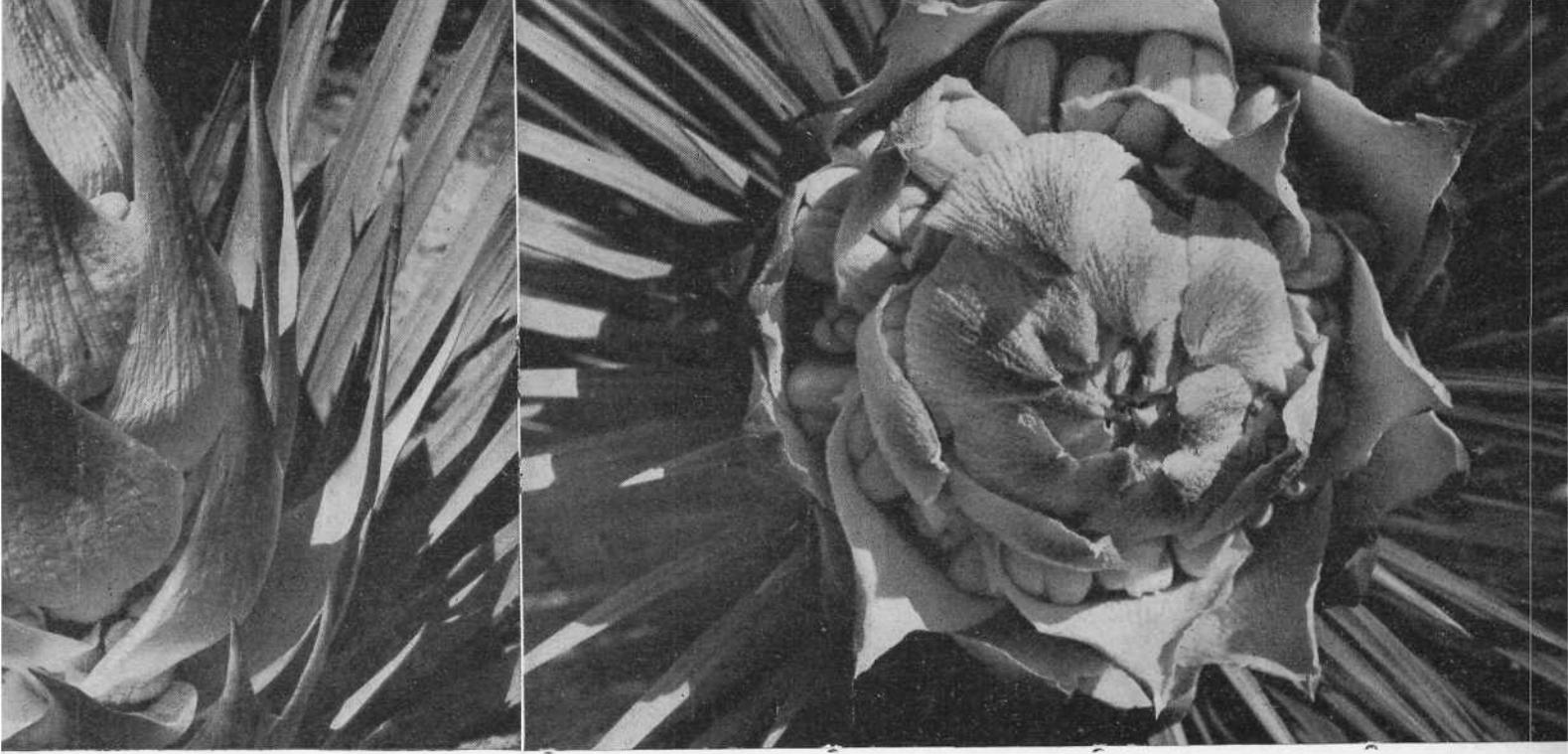
zation, the Joshua is host to the night lizard, *Xantusia vigilis*, which lives under the porous bark, subsisting upon termites, ants and insect larvae. Other animal life in the little community, according to Edmund Jaeger, includes at least 25 species of birds. Commonest inhabitants are red-shafted flicker, cactus woodpecker, ash-throated flycatcher, Baird wren, plain titmouse, western bluebird, Pasadena screech owl and Scott oriole. Pack rats sometimes build their large nests of coarse twigs at the base of Joshuas.

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5



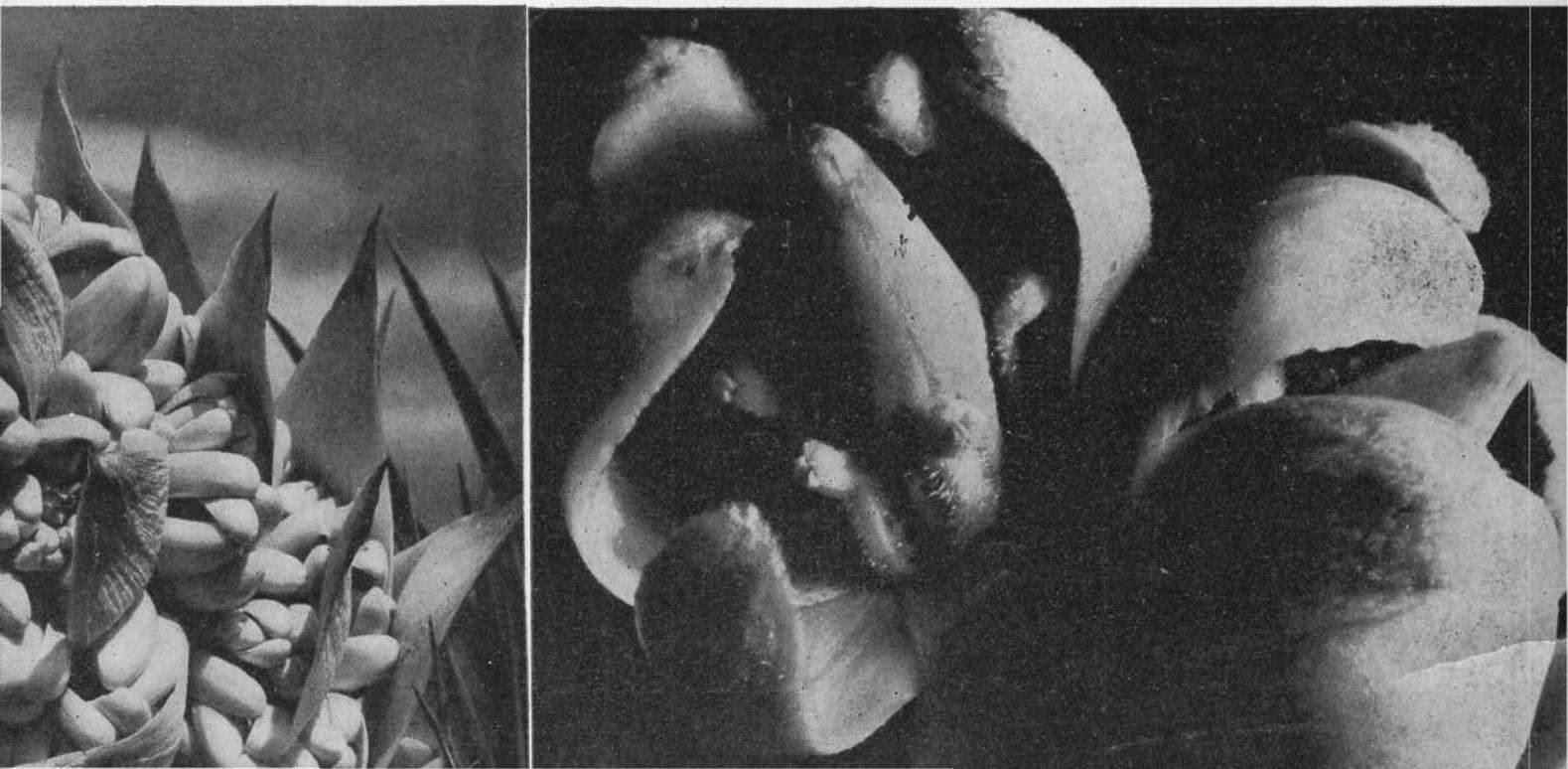


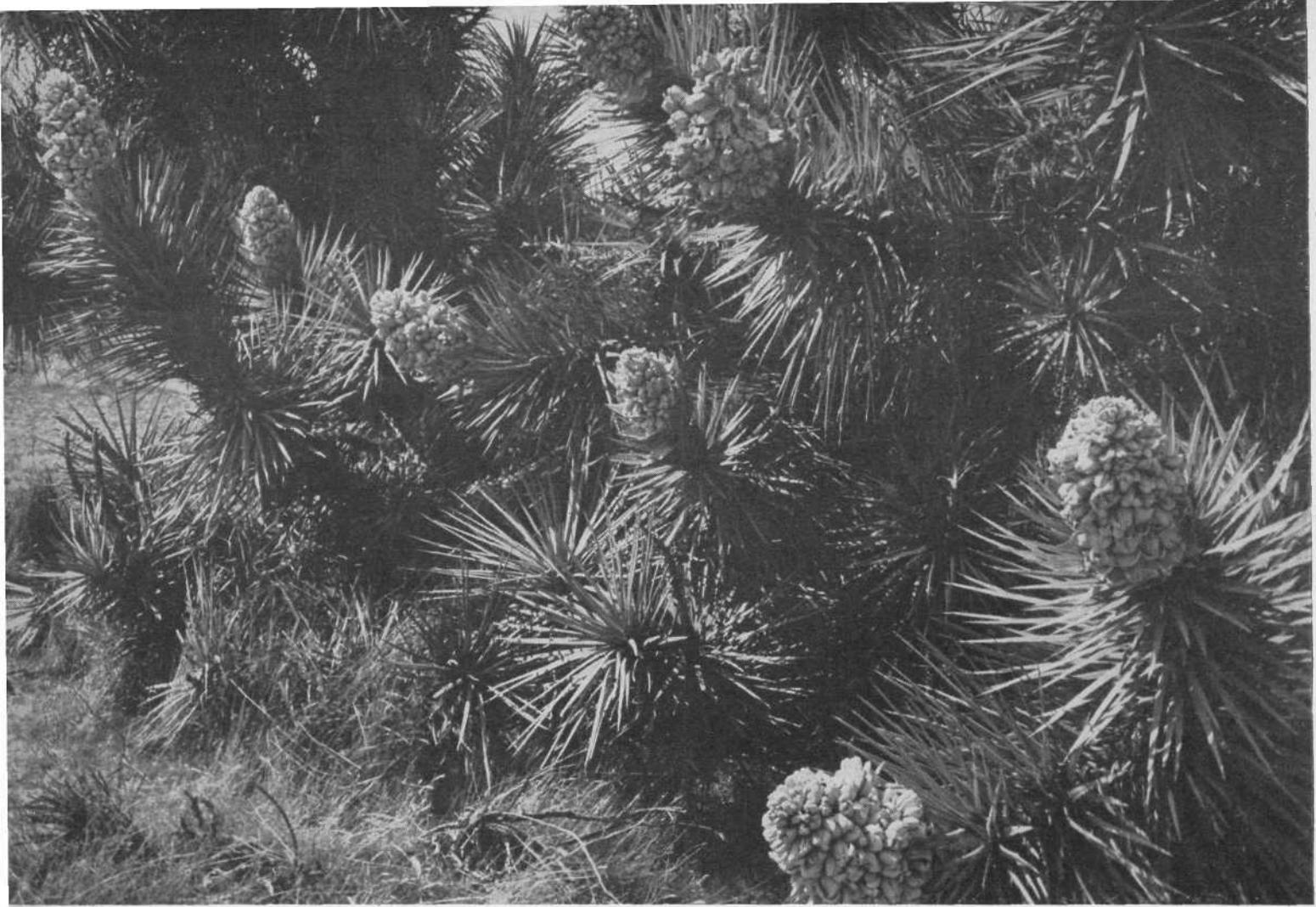
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Above, left to right. 1—In the earliest stage the Joshua bud resembles a large artichoke. The fleshy bracts, or modified leaves partially enclosing the flowers, are tinged with a soft rose coloring on the outside, while underneath they are tinted with a pale lemon yellow. Their texture is like soft chamois or suede. 2—As the buds develop and swell the bracts are pressed backward. At this period of growth the bracts reach their greatest beauty. Deep ashes-of-roses tinges the outer wall, which cups within the waxy creamy bundles of marvelously interlocked flowers. 3—The great "artichoke" is bursting with the crowding lilies within. Looking at it from the tip, the robust blossoms appear to be pressing forth vigorously against their soft protecting walls.

Below, left to right. 4—At last the bracts straighten out horizontally into an attractive star design, while the partially opened lilies continue to climb for a place in the sun. 5—Compressed into a dense ovoid mass the maturing flowers never find room to become full-blown, as do most other yuccas. The thick waxy petals are brittle and will break off if forced to open more fully. A heavy fragrance fills the air near the blossoms and attracts within the little pronuba moth which effects fertilization by depositing her eggs in the developing capsules. 6—Under each bract a pedicel, or flower stem, develops on which may be from one to nine flowers. From the center of each blossom the long pistil extends beyond the petals, disclosing the opening at the top through which the pollen is forced by the pronuba moth.

6





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Above. 7—Heavy clusters of densely crowded flowers are 12 to 18 inches long. As most of them bloom at about the same time, the flowering season is one of luxuriant display. When in full bloom the once lovely bracts shrivel up under the blossoms, become dark and brittle. The coloring at this period is greenish-white or cream, the weight several pounds.

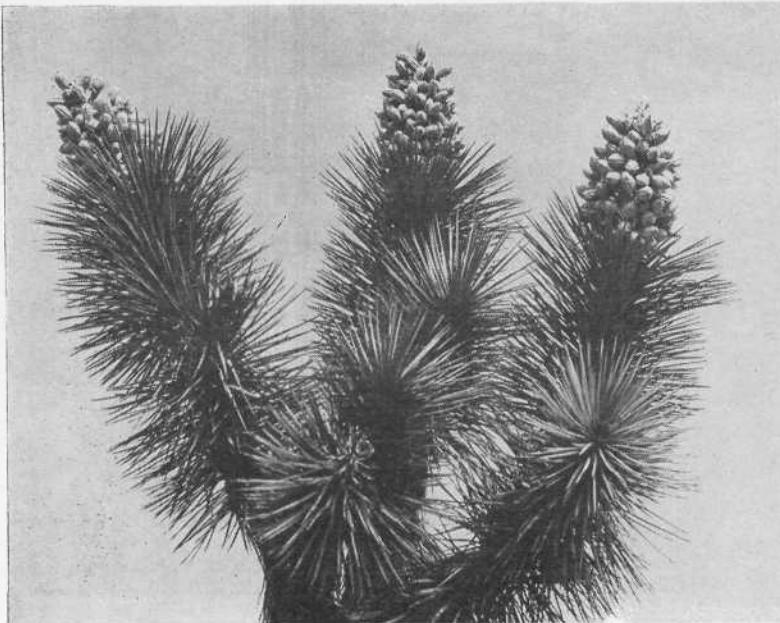
Below. 8—The capsules, or fruits, begin to develop near the base of the flower while the upper end still is in full bloom. They

8

often reach considerable size before the flowers are entirely gone. The persistent perianth, or petals, hang loosely about the enlarging fruits, giving a ragged appearance. Often these do not completely disappear until the ripe capsule itself falls off. 9—Almost mature capsule shows the persistent stamens and petals during development of the seeds within it. Dark spots probably are evidence of parasitic larvae which injure plant tissues just beneath surface. Fungus growth too may make such spots.

9





10

Above. 10—Sometimes the crop is so large the fruits crowd one another as closely as the blossoms before them. Since Joshuas live in the higher desert elevations which are subject to strong winds, each little stem, or pedicel, must be tough and strong to hold fruits until complete maturity. 11—When capsules have reached full maturity they break off readily, roll over desert like "tumble fruits." Fragile outer covering soon breaks



11

under strain of this rough treatment, seeds escaping to lodge in many scattered spots. Old flower stalk, however, may remain on tree for several years, a skeletal reminder of former loveliness.

Below. 12—High in the arid mesa lands of the Mojave desert such forests as this, in the Lancaster area, may extend for miles, varying from open to very dense stands. In all seasons Mojave's giant lily is an unusual feature of the landscape.

12



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"Brown and golden and rich! Something like a roasted yam, yet holding also an indescribable tang of pineapple and of mango." That is the way Marshal South describes roasted mescal, the most prized delicacy at Yaquitepec. This month he tells how the mescal hearts are gathered and roasted—and eaten. The South family practices the rite of mescal roasting in much the same manner as the Indians who once lived on Ghost mountain and left their ancient fire pits behind.

Desert Refuge

By MARSHAL SOUTH

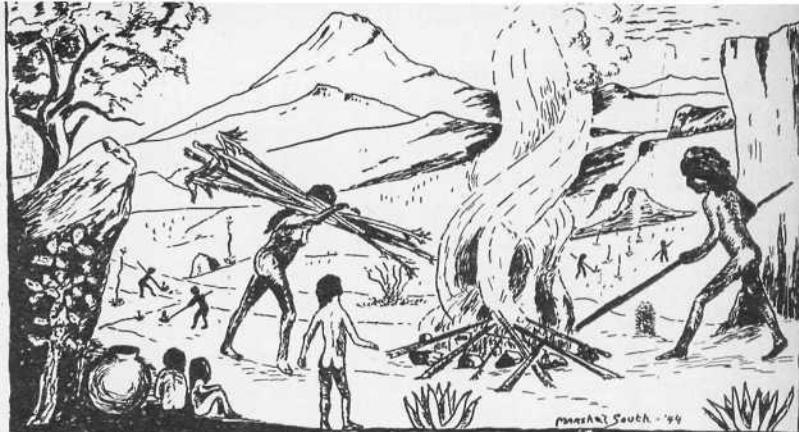
THROUGH the east window the ragged mass of an unfinished wall bulks like ebony against the pale dawn light. Except for the vibrant blundering notes of the big carpenter bees about the eaves troughs, Ghost Mountain is wrapped in a cloak of silence as absolute as though it was the first morning of the world.

Soon the sun will be up. Already the jagged rocks along the eastern ridge, where the mountain crest plunges into the shadowy lowlands, are beginning to glow pink. Lone, dead mescal poles are gaunt against the sky. Between the bulk of giant boulders the silhouettes of gnarled junipers are an edging of black lace. Rider is already awake, lying quiet and thoughtful in his covers, awaiting the arrival of the goldfish.

Every morning, just as the sun looms above the horizon, the goldfish make their magical appearance, swimming gracefully down the length of an old smoke-tinted ceiling beam. First, along the dark length of the stretching timber that is their promenade, appear the shimmering waves of a pale golden sea. Then, suddenly, in the midst of it, there are the goldfish. A long line of them. Flashing, ruddy-gold fellows of assorted sizes, all headed south. Their appearance, and the ceremony of counting them, marks the official beginning of a Yaquitepec day. Rudyard and Victoria always wake up to take part in this tally of the magic fish, and always are baffled. Because, no matter how many times they count them, they never can arrive at the same number twice. "Twenty-two," says Rudyard. "No, seventeen," declares Victoria. And they are both wrong—or maybe both right. For when Rider, the countmaster, makes the check, there are but eighteen. And as he goes over his count to verify it, there perhaps will be fifteen. Or nineteen. Magic is in the goldfish, that changes their number, from second to second, with the rapid lift of the sun. Sometimes we think that those people whose houses are so well constructed that there are no spaces beneath the corrugations of roofing iron through which the sun can paint glowing goldfish upon beams are missing a lot of fun.

Mescal roasting was hurried this year. We really ought to have done more of it, for the children love the brown, delicious, natural sweet. But there have been so many other tasks, and days have been so crowded, that we found it hard to use the necessary time.

Those days that we did manage to spare were picnics indeed. For we drift now through that enchanted period of spring when the rock crest of Ghost Mountain is vibrant with the crystal notes of orioles and canyon wrens, and all the white, gravelly stretches are gay with a carpet of desert flowers. To set forth in the early dawn, armed with shovels and digging bars, and bearing food for a day's outing, is sheer delight. There is a tang to the air, and a wide sense of freedom that belongs not to this age, but to another, when man was not so enmeshed in miseries of his own devising. Bare feet fall softly upon whispering gravel. From the junipers, as one brushes past their dark green branches, exhales an aromatic fragrance. In the stillness we imagine we



Old-time mescal roast. Ink drawing by Marshal South.

see, just ahead, the shadowy shapes of those simple hearted children of the desert whose dusky feet traced out these ancient trails between mescal hearth and mescal hearth in the long vanished years.

Mescal roasting is a family affair. Tanya and I find and bring in the sprouting plants that are ready for the baking. Rider helps dig the pit and fetches stones to line it. Rudyard and Victoria trot hither and thither, lugging in fuel. They cease their labors occasionally to hunt for snail shells or to admire the tiny thickets of desert ferns that grow in cool sheltered niches at the base of giant boulders.

It must have been like this in the old days, which only the silent rocks and ancient junipers remember. Then, as now, the orioles flung their liquid notes along the slopes. The blossoms of the desert pea bush crowded the space between the boulders with gay bouquets of dazzling yellow. The bodies of those who moved to and fro at their tasks were innocent of clothes. The old days and the simple dwellers of the desert are gone. "They killed them all off," an old Mexican woman once said to us sorrowfully. "They killed off all those poor people. But, *gracias a Dios*, maybe the padres at least saved their souls."

Mescal roasting is strenuous work. There is the pit to be dug. And afterwards it has to be roughly lined with stones. On these old hearths, where the earth is permanently black from the scorch of unnumbered ancient fires, the digging usually is not so hard as it would be in fresh ground. Also there are plenty of fire blackened stones that have been used and re-used numberless times in the past. This lessens the labor somewhat. But still the work requires considerable effort.

The dimensions of the pit can be governed by ambition—and the size of the proposed baking. About three feet across and from 18 inches to two feet deep in the center, when stone lined, is the average size of the pits we make. The stone lining is hasty and crude—just sizeable rocks laid together in a pavement over the bottom and up the sloping sides to the rim.

Digging in these old hearths always gives us a vivid sense of their antiquity. The blackened earth extends downward to great depths. Their age must be measured by many centuries.

About the hardest part of the proceedings is gathering the mescal hearts. The sprouting plants first must be found—and suitable ones always are widely scattered. You have to catch them in just the right stage. If the flower shoot is not high enough you lose a great deal in content. If it is too high the succulent juice pulp has begun to transfer itself to the upbuilding of the stalk. The ideal stage is when the sprout is up about 15 to 18 inches. At this period maximum plumpness—as far as roasting purposes are concerned—has been attained by the hearts.

Your plant located, the next task is to remove the central heart so that it can be roasted. This means taking practically the whole plant, with the exception of the extreme woody root, and divesting it of leaves. The old timers did this by means of chisel-pointed hardwood digging sticks. With these they

wrenched out the swelled heart and its attached sprout and pried off the surrounding dagger-pointed leaves. We still use the wooden sticks on occasion. But we have found that a light iron digging bar, although it is heavier, is more effective. It is sometimes quite a struggle to get off all of the stubborn leaves. When this is accomplished, you have a whitish-green club, something like a grotesque animal foot. This is the heart, the forerunner of your subsequent delicacy.

When a sufficient number of hearts have been collected, we lop off the extreme, spine-armed tip of the sprout and arrange them, thick end inwards, around the circumference of the roasting pit upon a low coping of good sized stones, built around the rim for that purpose. Then you proceed to pile the fuel in a great heap all around, covering coping stones and hearts alike. For this purpose any handy dry fuel will do. Usually we use the old dead butts and stalks of mescals themselves, intermixed with occasional dead branches of juniper, if there are any around. Apparently, from the comparative rarity of charcoal in the old fire hearths, this was the course followed by the ancients. Dead mescal butts provide intense heat, but leave almost no charcoal as compared with wood.

When the fire is lighted it must be kept well fed and blazing hotly for from a half to three quarters of an hour. Mescal hearts are stubborn things and can stand lots of heat. The blaze blackens them and makes hot the rim of rocks upon which they lie, heating also the lining of stones in the pit. Coals and blazing fragments fall into the pit and add to its temperature. It is a hot job and long mescal poles come in handy for stirring and arranging the blazing fuel.

At the end of half an hour or so the fire is allowed to die down. When it has dwindled to a mass of glowing embers, through which scorched mescal hearts and blackened rim rocks smoke hotly, you go around the edge of the pit, with a pole or a long handled shovel, and tumble scorched hearts, hot stones and embers all together into the pit. Then the rest of the hot ashes are piled in a mound above them. And over all a thick, heaped covering of earth. Then you go on to the same round of proceedings at the next roasting pit. Or you go home. The job is done.

And you leave your mescals cooking in their primitive oven for *two days*. At the end of the second day you go back and open up the pits. Things will have cooled down by then so they easily can be handled. The hearts that you take out won't look very inviting. They will be charred and earth plastered, and the shoots will be limp, brown sticky things. But don't throw them away. Carry them home tenderly and with reverence. For beneath the scorched, charred envelope lies something more delicious than many a famed delicacy of civilization.

Take a knife or a hatchet and carefully trim off the outer crusting, and the prize lies before you. Brown and golden and rich! Something like a roasted yam, yet holding also an indescribable tang of pineapple and of mango. Roast mescal! In all the desert there is nothing quite like it. And it must be tasted to be appreciated. It will keep, too, if you slice it and dry it for future use. But we at Yaquitepec seldom get this far. Our enthusiastic youngsters believe in living in the present, and the golden brown stuff doesn't keep very well with us. It tastes too good.

Our desert tortoises are awake again. All through the cold months they slumbered, hidden away in dark corners behind trunks and boxes in the house. Well sheltered in their hide-outs they were oblivious of the icy blasts that roared above Ghost Mountain. That is, two of them passed the winter in this orthodox fashion. The third—General Machado, our latest acquisition and by far the biggest of the three—scorned the protective folds of the covering which we had laid over him. He vanished at the beginning of winter, and we could not find him.

Then one day, Rider, poking about in the dark hinterland of the storeroom with a flashlight, came hurrying out with the sorrowful news that General Machado was dead. 'Frozen, poor

thing,' Rider said dolefully, shivering at the icy wind howling about the house. 'Come, see for yourselves.'

So we went and saw for ourselves. There, six inches from the floor, in a dark corner, wedged between the wall and the leg of an old cupboard, was General Machado, stiff and stark. Cold and rigid, his legs dangling out of his shell, and already mouldy looking, he hung there like a dead stiff coyote across the top of a barb wire fence.

We could not reach him without moving a quantity of piled boxes and stored stuff. His appearance, in the wan beam of the flashlight, told us that we couldn't do any good if we did reach him. It was too cold to undertake the job, anyway. And besides we hadn't much heart for it. Somehow the sight of our poor pet hanging there lifeless, as upon a gibbet, cast a gloom over us. Several times during the winter when we really ought to have moved stuff in that corner to get at things we wanted, we invented excuses.

With the coming of spring, the other two awoke. They came down the aisle between the trunks and stores looking for green grass. 'We ought to get that other dead tortoise out of the corner,' Tanya said reluctantly. 'The weather is warming. It's not healthy.'

No one wanted the job. But it had to be done. So Rider brought the long iron fire rod with the hook at the end of it and Rudyard fetched the flashlight. 'See if you can hook him out,' I said glumly, trying to decide whether we would bury him or keep his shell as a memento. 'Be careful though. He's probably pretty smelly.'

The youngsters grubbed in the corner, on hands and knees. There came a sudden exclamation. 'He's not here!' Rider's voice was startled.

Flashlight in hand Rudyard backed out from under a table. His eyes were wide. 'Someone has spiwited him away!' he said hoarsely.

'Oaha!' Victoria cried breathlessly. 'I know! The angels! They came and tooked him!' She bolted to Tanya to impart this amazing news.

But it wasn't the angels. For that afternoon, after we had hunted unsuccessfully for General Machado's body, we met him coming down the aisle, calm and distinguished looking. He had an air about him. An air of authority, such as any really worth while general ought to have. 'Out of my way,' he seemed to say haughtily. 'Can't you see I am in a hurry. I have to rejoin my command.'

So we restored him to his command. And they welcomed him with sour looks. For they do not like General Machado. Nor do we, now. Well, not much. For we feel, somehow, that he has been guilty of dying under false pretenses.

Quail calling from the ridges. 'Chonk!' And again: 'Chouk!' The bustling flutter of the purple finches who are putting the finishing touches to their nest in the tiny house atop the high pole at the center of the ramada. The sun has dipped far to the west now, and the shadow of the house roof reaches out to the chunky little squaw-tea bush that stands in the center of the white gravel court. Along the rocks of the terrace nod the blue-flecked chia sage blooms, and the desert four-o'clocks are just opening their white flowers. On the slope, beyond the little flat through which the foot trail winds, a clump of desert paintbrush flames a splash of scarlet.

• • • ATTRACTION

*Then worship not the good men do,
But do it, you, as well.
All hearts who wisely live and true,
To Light and Truth impel.
Whate'er you are you but attract
Exactly as you earn
And they who only good enact,
To them will good return.*

—TANYA SOUTH

LETTERS . . .

Rock Collector in New Guinea . . .

New Guinea Area

Dear Editor:

Yesterday I received the first copy of my gift subscription. To say I was thrilled would be putting it mildly. I have read Desert before, and being a rockhound and collector of Indian artifacts I naturally find it a source of entertainment and information. My rock collecting has been done mostly in California, Nevada, Arizona and New Mexico. After the war I plan to spend many happy hours again in the desert and mountain country of Arizona and New Mexico.

I am enclosing a description of the geographical and botanical aspects of New Guinea. There are beautiful rock and shell specimens here. One section is famous for gold mining. Many soldiers stationed there have melted and hammered out gold rings from the beautiful native gold.

Agate, chalcedony, onyx, copper, jasper and coral are found here. We find cat eyes that the boys make into ring and necklace sets. I spend all my spare time looking for rocks and shells. The rock specimens all are found along the beaches and washes. This is also butterfly collectors' paradise.

At home I was president of the Santa Maria rocks and minerals club. We aim to have a bigger and better club after the war. If any of your readers care to write me I might possibly sometime be able to send them a rock, shell or coral specimen.

I might add that soldiers over here are not heartened by the constant bickering in and out of congress over labor, business, soldier vote, soldier bonus, win-the-peace, 1944 presidential election, second front and countless other petty aches. What we want is peace and unity of purpose at home now. We want to feel that we have a solid united home front, not a disintegrating one.

Thanks again for an interesting and colorful magazine. Reading it has done much to keep my morale and that of my friends high.

CPL. JOHN A. WELDON

Escape to the Desert . . .

Salt Lake City, Utah

Dear Sirs:

Thank you for publishing such a delightful magazine. Because we travel all of the time we are unable to subscribe, but have to take a chance finding it wherever we are. Once we were desert rats, but now our travels take us to damp and rainy climates most of the time. But once a month we are able to escape back to the desert in the pages of your magazine.

MRS. J. C. ALEXANDER, JR.

JUNE, 1944

Desert Goes to a Sailor . . .

FPO San Francisco

Dear Miss Harris:

Your excellent Desert magazine I devour most eagerly as soon as it is received aboard. It transports me to our enchanted desert—at the moment to Borrego where once again I'm tramping among the badlands.

Although I've sailed the sea for a long time yet I love the desert. It is and always will be my heart's wonderful happy home. This confession is made, I'm sure, to kindred spirits—those associated with DM couldn't be otherwise. So you see I only wanted to warm my chilled inner self with the smiling rays of desert sunshine which you all so abundantly enjoy and I so ardently crave.

Now that I've opened the window and again glimpsed my world of happiness, I must close it quickly, for here too is need for my thoughts and efforts—so that one day familiar trails may again be trod without ever the need to look back with uncertainty.

PETER PAUL MARTINEK

Birds and Spiders Improve DM . . .

Boulder City, Nevada

Dear Sirs:

I want to congratulate you on the last few copies of Desert. The articles on flowers, spiders, birds, etc., were very interesting and a very great improvement over last year's issues. It has helped me to learn more about life on the desert.

MRS. VEVA BERRY

Claim Black Widow a Fake . . .

Silver City, New Mexico

Dear Sirs:

Having read "Spider House" by Mora M. Brown in the April issue, I was considerably confused when I opened my April copy of Natural History and read an article, "The Modern Nature-Faker" by Wm. H. Carr, associate curator of Museum of Natural History.

The article is headed by the statement, "Before some trust is lost in the printed word, it is time to point out that a great many tall tales and misleading statements are being published as fact." Among the popular fallacies current today seems to be the one about the use of Black Widow spider silk in bomb sights and other military sighting instruments. It says that Dr. Willis J. Gertsch, associate curator of insects and spiders of American Museum of Natural History, upon becoming suspicious of statements in the press, made inquiries among optical manufacturers. He "was told that spider silk is too fragile for these purposes and that the thread could

not be adapted to the varied and complex needs of such instruments." He learned that etched glass is used in optical fire control instruments, that platinum wire is considered superior to spider silk, and that the silk of other spiders is used more often than Black Widow spider silk in other types of optical instruments.

I do not mean to say that your article is entirely incorrect. But it is definitely misleading; and of course the writer dwells upon the sensational Black Widow to the exclusion of the above facts.

WINIFRED NOBLE

Dear WN: Having no desire to publish any material because of its sensational value, Desert upon reading the Natural History article you refer to, rechecked with Mrs. Mora Brown, author of "Spider House," with Mrs. Nan Songer, who furnishes the web for precision instruments, and T. K. Lee, who developed the Tackhole Dot and who uses much of the web extracted by Mrs. Songer. Their statements follow.—LH.

Riverside, California

Dear Miss Harris:

Despite the high authority quoted in Miss Noble's letter, I cannot see wherein my article "Spider House" is either incorrect or misleading.

In the fourth paragraph of this article I quoted Mrs. Songer: "... for consistently good web I like best the Green Lynx and Golden Garden. In autumn, though, these adults die, so for winter work I use adult Black Widows and the young of the other two species."

I visited Mrs. Songer in early spring. Consequently the only adult spider available was the Black Widow; hence, necessarily a Black Widow was used for demonstration.

Please understand I do not question the sincerity of Wm. H. Carr, Dr. Willis J. Gertsch or Miss Noble. I am 100 per cent against faked reporting, too, but I believe investigation will show that they did not look deeply enough into the subject.

MORA M. BROWN

Yucaipa, California

Dear Miss Harris:

I wish to state that Mrs. Brown's article "Spider House" which appeared in your April issue is perfectly true and accurate in every detail. Since I was the first person in this country to use the Black Widow and gave the first article to Nation's Business magazine in 1941, and since a number of leading magazines, such as Coronet, Nature and several others as well as Desert, recently have printed similar articles, all mentioning the use of the Black Widow silk in wartime precision instruments, it might seem that the article in Natural History by Wm. H. Carr could be taken as a challenge to these articles. Since each arti-

cle was sent to me and received my personal O.K., I should like to answer the accusations made by Mr. Carr.

I have been supplying silk for various aeronautical military sighting devices as well as telescopic gun-sights to contractors for U. S. bureau of aeronautics, supply divisions of the war department, navy department, as well as individual optical concerns for some time. And in the winter time much of this silk IS that of the Black Widow. According to information I have there also are certain army laboratories which supply their own silk for instruments which use only the Black Widow.

I see nothing sensational about using the Black Widow spider. I simply started using them during the winter months as the only large spider with a sufficiently strong silk that was available here at that time. They are very well-behaved during extraction of web.

However, by next winter I do not expect to use them, as an explorer, Chas. A. King, made a trip into interior Mexico to bring out for me 150 large tropical spiders, and the Mexican laboratory of the U. S. department of agriculture sent 100 more of the same species. The silk from these spiders has been declared superior in several ways.

There does seem to be a general misconception of this work, though I personally have seen no "tall tales" printed which might account for it. I have received letters

from hundreds of people from all parts of the country who wish to take up the work. The general impression seems to be that extraction of spider silk is a large production industry. I would be glad to have *this* impression branded as a big mistake. As Mr. Carr points out, there are many other types of cross-hairs used where size will permit. The etched line is used on all sights that must withstand heavy concussion. The steel, or platinum wire is used in a large percentage. If the inquiries had been more careful, it would have been learned, however, that the engraved line, even the finest line that can be etched with diamond, is much too heavy for certain telescopic reticles. Also that the steel or platinum wire is several times WEAKER in certain respects than the spider's silk with its higher degree of elasticity, and will not withstand the contraction of freezing temperatures of the stratosphere.

I have been called many things, from "Spider Woman" to "Black Widow Lady"—and I haven't minded at all. But I certainly would resent being classed as a 'Nature-Faker.'

NAN SONGER

Birmingham, Alabama

Dear Editor:

It is true that to date manufacturers of telescope sights use steel or tungsten wire in their instruments, being rather coarse

and not as well suited to really fine sighting as when the spider silk with the Tack-hole Dot at center is used. Much research has been necessary to perfect the methods of installation of spider silk in telescope sights and the writer has spent half a lifetime doing just that. It has been perfected and the methods of application, in some respects at least, are secret and the materials used in the application are of my own formula.

Suffice it to say that in the last five years I have installed reticles of spider silk, mostly of the Black Widow variety (as furnished by Mrs. Nan Songer) in many thousands of telescope sights, which are now in use in large numbers in Alaska and Canada (where temperature changes are extreme) and all over the United States and many of them have been taken into the Pacific area by various members of the armed forces. Major Rex Applegate, chief of combat section, Camp Ritchie, Md., uses scopes in instruction there for snipers.

Hunters by thousands use them on such big rifles as 505 Gibbs, 375, 333, 300 H&H, etc., and it is rare indeed that we ever hear of one breaking from the shock of recoil. They stand the shock better than steel wires. The reason manufacturers do not use it, so far, is because of the difficulty in applying it as a manufacturing proposition and lack of skilled technicians.

T. K. LEE

Keeping Essential Crops Growing . . .

IS THE PATRIOTIC MOTTO OF IMPERIAL IRRIGATION DISTRICT, WHICH IS THE SOLE AGENCY SUPPLYING WATER AND POWER TO FARMS AND CITIES OF FERTILE IMPERIAL VALLEY, CALIFORNIA.

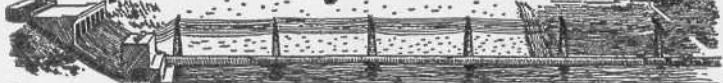
On March 15, 1944, there were 4,536 of these farms, of which 2,388 or 52 per cent were owner-operated, and 2,148, or 48 per cent, were farmed by tenants. Average area of each farm was 100.4 acres.

In 1943 agricultural products produced in Imperial Valley had a valuation total of \$58,544,562.

Imperial Irrigation District is continuing its vital program of holding the line on the home front by maintaining 3000 miles of canals and drains—and 27,000 canal structures—despite serious handicaps in shortages of labor and essential materials, because it is vitally necessary to insure delivery of water to Imperial Valley's fertile acres that are producing food for victory.

This stupendous achievement represented Imperial Valley's contribution to the Nation's "Food for Victory" campaign—that the United States and her Allies might also have superiority in food, as well as in ammunition, guns, tanks, planes and other necessary military equipment.

Imperial Irrigation District



Use Your Own Power—Make it Pay for the All American Canal

HERE AND THERE . . . on the Desert

ARIZONA

Mexico Water Treaty Shelved . . .

PHOENIX—Senate foreign relations committee in April postponed action on treaty between United States and Mexico, distributing waters of Colorado and Rio Grande rivers, until after fall election, unless state department should demand earlier action. Main objection to provisions of the treaty to date have come from California senators Downey and Johnson, with some opposition from Arizona. Colorado Basin senators up for reelection are Thomas, Utah; Downey, California; Hayden, Arizona; Milliken, Colorado, and McCarran, Nevada.

Wants Franchise for Indians . . .

GANADO—Federal wardship for Indians and discriminations against them should be removed "at the earliest possible time," declared Dr. C. G. Salsbury, for 17 years superintendent Sage memorial hospital and Ganado mission. He scored the continued "condescending paternalistic interference" of the government with every detail of Indian life, the 389 treaties still in effect some of which are "absolutely ridiculous" which are basis for preserving wardship, implying incompetence. He stated our dealings with the Indians "run the whole gamut from pillage and destruction to sentimental coddling—from starvation to feeding on the fat of the land, from the best we have to offer in education to insisting that he revive and preserve his ancient tribal beliefs." "Sentimentalists want him kept in paint and feathers, medical scientists want him to have modern care, some of the long-haired writers and bureaucrats want him to have a smattering of medical science and the medicine man's chant along with it. Some want him to raise all the sheep he can—others want to cut him to nothing and live on the government. I believe every Indian should be granted the franchise and released from wardship unless he is proved incompetent, and certainly no Indian with less than half blood should be considered an Indian."

Gold Hunters Lost, Found . . .

PHOENIX—Anton E. Hohre, 59, and his 72-year-old unidentified companion, who became lost in Four Peaks area, were found several days later by deputy sheriffs, little worse for the experience. A plane from Falcon Field located the men and dropped smoke bombs with which the aviators signaled their position to the search party. The couple were equipped with a "gold finding machine" with which they were attempting to locate various minerals.

Paradise Ranch Land Sold . . .

PHOENIX—M. B. Cheney, prominent Cleveland manufacturer, has sold about 1000 acres of his widely-known Tumbling 77 ranch in Paradise valley. Mr. and Mrs. Fowler McCormick, Chicago, purchased one tract of 450 acres which includes a beautiful modern residence, guest house, farm house, manager's residence and stables. The other parcel of 480 acres was sold to Daniel C. Gainey, Owatonna, Minn. Cheney still owns 1000 acres in the valley, which he plans to develop.

• • •

John G. Verkamp, 67, widely known Indian trader, lumberman and stockman, died April 4 at his Grand Canyon home. He had lived at Flagstaff and Grand Canyon, where he established a curio store in 1906, for 50 years.

• • •

Dr. Charles P. Austin, Morenci, was elected 1945 president Arizona medical association April 20 at meeting in Westward Ho hotel, Phoenix.

CALIFORNIA

River Encroaches on Town . . .

NEEDLES—Slowly rising Colorado river waters, fed by backwater from Parker dam, may force this town of 4000 population to move to higher elevation. In April river was four feet higher than town, which is partly protected by river dikes. Flood experts estimate that entire area will be flooded in another three or four years.

No Coolers for Hot Workers? . . .

HOLTVILLE—Dwellers in Imperial Valley are getting hot, and agriculturists are getting even hotter as they face summer with no assurance evaporative coolers will be available. Local chamber of commerce, appealing to Senator Sheridan Downey, Governor Earl Warren and WPB, following army's withdrawal of its approval of cooler manufacture, stated, "Agricultural workers as well as other individuals here, have no prospects of getting any type of coolers or fans for their homes with coming of summer heat. This situation is vitally important to the war effort as without cooling these individuals will move to cooler regions for the summer months."

• • •

Gordon Feekings has been elected Palm Springs chamber of commerce president.



Don't try the train during '44 —Unless the Axis is no more!

Until the war ends our best advice to civilians is this: Don't think of making a train trip unless you absolutely *must*! We cannot carry all civilians who want to travel because we're doing our war job. All Southern Pacific trains are filled to capacity, and most trains are sold out a long time ahead. If you can't buy the train ticket you want right now—why not put the train fare into WAR BONDS?

S • P *The friendly Southern Pacific*

River Board Members Appointed . . .

COACHELLA — Six California members of Colorado river board were appointed for indefinite terms by Governor Earl Warren April 26. Members are E. F. Scattergood, Los Angeles, general manager Los Angeles department water and power; Dr. Harry W. Forbes, Coachella, member Coachella valley county water district board; Fred W. Simpson, San Diego, president San Diego highway development association; Evan T. Hewes, El Centro, president Imperial irrigation district; W. P. Whitsett, Los Angeles, director Metropolitan water district of Southern California, and Fred J. Toole, Blythe, trustee Palo Verde irrigation district.

Want Mineral Rights Reserved . . .

WESTMORLAND — Spruce - Westmorland farm center has requested directors of Imperial Irrigation district to reserve all mineral rights on land sold hereafter or contracted for sale by the district so that value resulting from discovery of oil in Imperial Valley may be used to reduce district's bonded debt.

Dry Ice Plant Expanding . . .

NILAND — Increased navy demands are responsible for expansion plans for National dry ice corporation, which is a 95 per cent war-producer. Since January three new carbon dioxide wells have been drilled, fourth is underway. Expansion will give plant 40-ton daily capacity. L. B. Fade, superintendent, says all navy bombers and ships are serviced by dry ice products.

Chandler Mexico Interests Sold . . .

CALEXICO — Harry Chandler, Los Angeles newspaper publisher, and his associates reportedly have sold all their holdings in Mexicali valley, south of here, some of which they have held since 1899. Mexican interests are said to have purchased the property, which included banks in Mexicali, Tijuana and Ensenada, Colorado River Land company holdings, and 500,000 acres of land.

• • •

Eugene E. Therieu, former city councilman, was elected Palm Springs mayor April 18.

NEVADA

Nevada Fishing Seasons . . .

HAWTHORNE — Fishing seasons have been announced by the following counties: Nye, May 1-September 30; Churchill, May 1-October 1, no closed season on catfish; Esmeralda, May 3-October 1; Lyon, April 15-October 1. Fishermen should consult county clerks or wardens for specific regulations.

"Bing" Buys Nevada Ranch . . .

ELKO — Harry L. (Bing) Crosby has purchased a 10,000-acre stock ranch near Tuscarora, 50 miles north of here, and will run 2100 head of cattle. Announcement was made in April by Crosby's Nevada manager, Howard Eacret, who will manage the ranch. Property involved an exchange of the 3600-acre Jube Wright ranch along the Humboldt river which Crosby had operated several years.

Believe Sheep Poisoned . . .

GOLCONDA — Loss of more than 3400 sheep on range in vicinity of Getchell mine near here was attributed to poisoning by E. A. Clawson, receiver for Pacific States saving and loan company, owners. Clawson said most of the sheep were found dead day after flock was moved to area, and that all burros used by herders also died of poisoning. Majority of the sheep, it was estimated, were worth \$15 per head. Investigation was started.

New Naval Air Project . . .

FALLON — Navy announced April 19 that a \$1,627,800 project has been approved for naval auxiliary air station here, to operate under cognizance of naval air station at Alameda, California.

Aviators Take Census . . .

WINNEMUCCA — Aerial survey in Humboldt and Pershing counties for antelope and deer census revealed that "horses were very prominent on the range." Count showed 1384 horses, 215 deer, 675 antelope, 660 bucks, 89 Canadian honkers, 10 coyotes, three burros, one mule.

A. J. Shaver of Winnemucca was appointed engineer of Colorado river commission with headquarters in Las Vegas by Gov. E. P. Carville in April.

Appropriation of \$450,000 for additional construction at Battle Mountain airport was made in April, according to Senator P. A. McCarran.

NEW MEXICO

Pueblo Agent Resigns . . .

ALBUQUERQUE — Dr. Sophie D. Aberle, superintendent United Pueblo agency of New Mexico since 1935, has resigned the position to continue medical research on malaria in Washington, D. C. Dr. Virgil K. Whittier is acting superintendent.

The Desert Trading Post

Classified advertising in this section costs five cents a word, \$1.00 minimum per issue—Actually about 1½ cents per thousand readers.

MISCELLANEOUS

THE ROCKHOUND COLONY GROWS—Eighteen to date. We'll have a name by next issue. So many have written they are coming in April to buy that I expect we'll soon be sold out. If you belong to the rockhound fraternity and are looking for a fine location and a nice place to live, write for particulars. We want only the best people and want you to be satisfied or we don't want you. We want a colony that will be TOPS in every way. Come and look things over. The Colorado Gem Co., Bayfield, Colo.

MANUSCRIPTS MARKETED: Books, stories, plays, photoplays, articles. Circular D-64 Free. OTIS ADELBERT KLINE, Literary Agent, Established 1923, 507 Fifth Avenue, New York 17, New York.

FOR SALE—Indian relics, 23 assortments from which to choose, \$1.00 per assortment or \$20 for all 23. All perfect specimens. Choose from these: 10 beautiful prehistoric Indian arrowheads; 10 tiny bird arrowheads; 10 arrowheads from 10 different states; 2 stone tomahawks; 4 spearheads; 5 stone net sinkers; 10 fish scalers; 2 hoes; 4 agate bird arrows; 5 flint drills; 7 flint awls; 10 beautiful round head stunning arrowheads; 4 fine sawed wedge arrowheads; 4 fine flying bird arrowheads; 4 fine drill pointed arrowheads; 4 fine queer shaped arrowheads; 4 rare double notched above a barbed base arrowheads; 5 double notched above a stemmed base arrowheads; 12 small knife blades of flint; 1 rare shaped ceremonial flint; 3 flint chisels; 7 crystals from graves; 10 arrowheads of 10 different materials including petrified wood. Locations given. 100 arrowheads \$3.00. 100 very fine mixed arrowheads all perfect showy colors including many rare shapes such as drill pointed, double notched, saw edged, queer shapes, etc., location and name given, \$25.00. List free. Lears, Glenwood, Ark.

MUSEUM SUPPLIES WANTED: Anything suitable for museums. Rocks, Minerals, Fossils, Guns, Horns, Beadwork, Meteors. Catalogue 25c. Museum Supplies, 6601 Oshkosh, Chicago 31, Ill.

Wanted—Coleman No. 500 single burner camp stove or will trade Turner two-burner pressure stove in good condition. Dan H. Dunham, 3014 So. 34th St., Omaha 5, Neb.

The BASIC FACTS of your unknown self. Do you know their beneficial nature and where to find them? Address: BASIC-RESEARCH LABORATORIES SYSTEM, 785 Lafayette Street, Denver 3, Colorado.

25 Genuine Indian arrowheads, \$1.00; Tomahawk head 50c. Cat. of Indian relics, crystals and ore specimens. Geo. Holder, Glenwood, Ark.

LIVESTOCK

KARAKULS producers of Persian Lamb fur are easy to raise and adapted to the desert which is their native home. For further information write Addis Kelley, 4637 E. 52 Place, Maywood, California.

"Karakul Fur Sheep — America's Great Livestock Opportunity—You can be a part of this fascinating business and have your Karakuls cared for by experienced rancher. Write for details, James Yoakam, National Distributor, 1128 No. Hill Ave., Pasadena, California."

REAL ESTATE

For Imperial Valley Farms—

W. E. HANCOCK
"The Farm Land Man"
Since 1914

EL CENTRO — CALIFORNIA

Boys Camp at Mesa Verde . . .

GALLUP—Plans for explorers' camp for boys 12 to 16 years of age at Mesa Verde national park, Colorado, have been announced by Ansel F. Hall, hotel concessionaire at Mesa Verde. Camp will operate from June 19 to September 9 with two six-weeks periods. Arrangements are being made to meet the boys here and escort them to Mesa Verde for a summer of pioneering and adventure in Navajo country, Mesa Verde and La Plata mountains.

Roman Hubbell Son Killed . . .

GALLUP—Capt. Roman Hubbell, Jr., 30, eldest son of Roman Hubbell, was killed in action in capture of Manos island of the Admiralty group in South Pacific March 24. Although his parents live at Winslow, Arizona, where his father is an Indian trader and Indian tour operator, Capt. Hubbell was reared in Gallup and graduated from Gallup high school in 1933.

New Mexico Trade High . . .

SANTA FE—New Mexico led far western states in trade with a 15 per cent gain in February over same period in 1942. State was second to Florida, which had 25 per cent gain. Arizona ranked 21st, Nevada 25th, Utah 32nd. Survey was based on reports from nearly 19,000 stores.

UTAH

Days of '47 Scheduled . . .

SALT LAKE CITY—Expansion of Days of '47, Inc., to include groups which formerly sponsored Pioneer Days celebration has been announced by Thomas B. Child, president Days of '47. Invitations to participate with Sons and Daughters of Utah Pioneers July 18-24 have been extended to chamber of commerce, junior chamber of commerce and other groups. Committee members have been appointed to prepare for the July event.

Coyote Evades Bloodhounds . . .

OGDEN—It took weeks of effort, 20 hunters and a pack of bloodhounds to destroy one coyote, accused of sheep killing, which mysteriously had made his way to Fremont island in Great Salt lake. Finally a hunter's bullet drove the coyote into the salty lake, a motorboat crew overtook him, dragged him aboard and killed him.

Utah's First Plastic Firm . . .

SALT LAKE CITY—Utah Plastic company was undergoing final test before launching into production on its first war order in April. Threaded electric fixture taps are the first articles to be produced and are believed to be first plastic product made in Utah.

Utah state fair will be held September 3-9, at Salt Lake City fairgrounds, Sheldon R. Brewster, secretary-manager.

Utah American Legion convention will be held in Richfield, August 18-19.

Robber's Roost Roundup is scheduled for July 28-30 at Price.

A WESTERN THRILL

"Courage," a remarkable oil painting 20x60 feet, the Covered Wagon Train crossing the desert in '68. Over a year in painting. On display (free) at Knott's Berry Place where the Boysenberry was introduced to the world and famous for fried chicken dinners with luscious Boysenberry pie.

You'll want (1) A 4-color picture of this huge painting suitable for framing. (2) A 36-page handsomely illustrated souvenir, pictures and original drawings, of Ghost Town Village and story of this roadside stand which grew to a \$600,000 annual business. (3) One years' subscription (6 numbers) to our illustrated bi-monthly magazine of the West. True tales of the days of gold, achievements of westerners today and courageous thoughts for days to come. Mention this paper and enclose one dollar for all three and get authentic western facts. Postpaid.

GHOST TOWN NEWS,
BUENA PARK, CALIF.

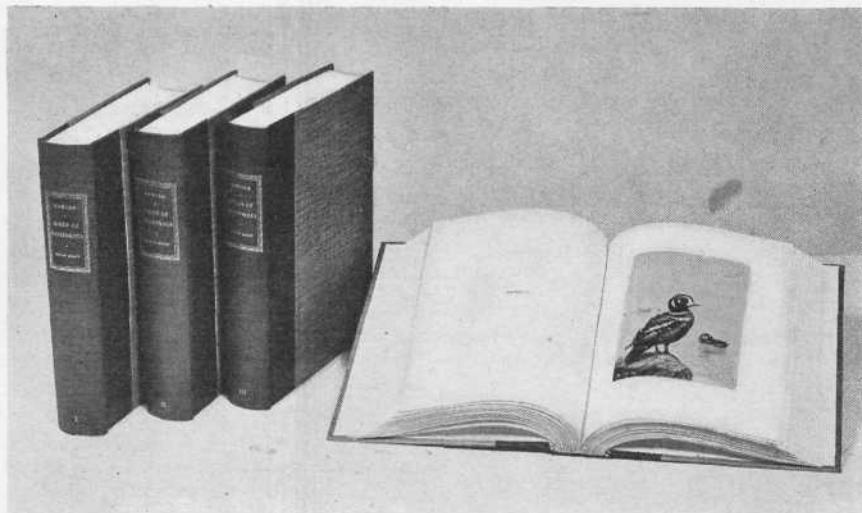
No Desert Library is complete without this magnificent set of books—the most authoritative work on desert birds

THE BIRDS OF CALIFORNIA

By W. LEON DAWSON

A complete scientific and popular account of the 580 different species of birds found in the State of California. 2121 pages. Over 1400 illustrations including 110 full-page color plates of magnificent quality, by Major Allan Brooks. Printed on fine coated paper, each volume, size 12 $\frac{3}{4}$ x10 $\frac{1}{2}$ x2 $\frac{1}{4}$, is bound in two shades of top-grade library buckram, stamped in genuine gold. Completely indexed. Individually cased.

Color plates include such desert birds as: Scott's, Hooded and Bullock's orioles, Cooper's and Western Tanagers, Green-tailed and Desert Towhees, Cactus and Gila woodpeckers, Valley and Desert quail, Roadrunner, White-tailed kite, Band-tailed pigeon, Verdin, Phainopepla, Lazuli Bunting, Arizona grosbeak, and 92 others.



Originally priced at \$200 a set, a few remaining sets of the de-luxe edition, already a collector's item, are offered at \$60.00 postpaid to any part of the U.S.A. Satisfaction guaranteed. To order, fill in coupon below.

THE DEVIN-ADAIR CO., Dept. D.
23 East 26th St., New York 10, N. Y.

Please send me _____ sets of Dawson's *The Birds of California*. Check enclosed.

NAME _____

STREET _____

CITY _____ STATE _____

Mines and Mining . . .

Washington, D. C. . . .

Immediate diversion of helium to private and commercial users, according to U. S. Bureau of mines, has been made possible by bureau's spectacular wartime expansion ahead of schedule, which has left large reserves for government use, and by present extraction of helium which otherwise would be wasted from natural gas and subsequent piping to wartime industrial plants. Due to new developments helium will play important peacetime role in treatment of asthma, tuberculosis and other respiratory diseases, in eliminating or reducing caisson diseases, in operating room as part of noninflammable anaesthetics, and in welding magnesium metal. Other new uses include cooling of electric motors, in explosion-proof motors, low temperature heat treatment, preservation of foods, as tracing gas to determine underground migrations of hydrocarbon gases. Production costs are now about one cent per cubic foot. Production figures are secret but bureau says present output is 25 times prewar total, due greatly to helium coming from new Navajo plant in New Mexico.

Las Vegas, Nevada . . .

Hitherto censored statistics on 1942 production of magnesium metal, just released by U. S. Bureau of mines, reveal 200 per cent greater production than in 1941. Of total 1942 production of 97,925,684 pounds, actual primary and secondary consumption that year was 84,525,700 pounds. Principal producers, location and source are: Dow chemical company, Midland, Mich., brine; Dow chemical, Freeport, Texas, sea water; Dow chemical, Valasco, Texas, sea water; Permanente magnesium corporation, Permanente, Calif., magnesite; Permanente, Manteca, Calif., magnesite; Diamond magnesium company, Painesville, Ohio, magnesite; International mineral and chemical company, Austin, Texas, chloride; Mathieson chemical company, Lake Charles, La., chloride; Basic magnesium, Las Vegas, Nev., magnesite; Ford motor company, Dearborn, Mich., dolomite; Magnesium reduction company, Luckey, Ohio, dolomite; New England lime, Canaan, Conn., dolomite.

Milford, Utah . . .

Completion in April of Tintic Standard mining company's fluorspar mill at Cougar mine 65 miles southwest of here marks first step in establishing Utah as major producer of metallurgical and chemical grades of fluorite. When exploration gave assurance of at least 80,000 tons of ore averaging 40 per cent calcium fluorite, company exercised its option and contracted with Metals reserve company to deliver concentrate over period of January 1, 1944, to March 31, 1946. Concentrate will be trucked to Lund for shipment. Later addition of equipment to produce the higher grade chemical fluorite is planned.

Banning, California . . .

Frank Backman, former Banning resident and engineer on Colorado river aqueduct, has been appointed manager of Henry Kaiser steel mill at Fontana, according to Banning Record.

El Centro, California . . .

Belief that oil may underly rich farm land in central and southern Imperial county is held by oil companies which have leased more than 8000 acres preparatory to test drilling. Amerada oil company, with leases in Heber district, is reported to have spent about \$200,000 on preliminary surveys. Texas company also is interested in oil possibilities. Neither company is bound by leases to spend more than a year's rental if tests prove unsuccessful. Independent Exploration company, of Houston, Texas, is another oil company interested in this county. They have established offices in Brawley.

Trona, California . . .

Boric acid produced here is used in borosilicate or fiber glass, for important wartime roles. Tensile strength exceeding 250,000 pounds per square inch makes glass fibers ideal as reinforcement for plastics. They will melt but will not burn. They will not stretch, swell or shrink, are unaffected by most chemicals. In various forms, they are used to weave fabrics which withstand heat, damp and decay; to make blankets and boards for heat and sound insulation, retainer mats which increase life of storage batteries.

Twentynine Palms, California . . .

To meet increased war demands Desert Chemical company, at east end of Dale Dry lake about 20 miles east of here, is installing complete new spraying system for salt cake production, and new salt vats to bring total area covered by vats to 200 acres are under construction. Although tonnage of salt and salt cake cannot be revealed it is stated production in past three years has increased 1500 per cent. The salt is in demand by magnesium and synthetic rubber industries. Salt cake is used primarily in pulp paper and glass industries.

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The OLD MEXICO SHOP
D SANTA FÉ—NEW MEXICO

San Francisco, California . . .

State division of mines press bulletin just released gives 1943 production figures for carbon dioxide, iron and quicksilver. Two wells, one near Niland, Imperial county, and one near Hopland, Mendocino county, produced 227,424 m. cu. ft. carbon dioxide gas which was compressed to make 14,037 net tons dry ice valued at \$248,126, a gain over 1942 of 2116 tons. Iron ore shipments totaled 907,458 tons valued at \$2,341,827 f.o.b. mine, which came from four properties in San Bernardino county and one each in Santa Cruz and Shasta counties. This total is more than all iron ore mined in state since 1881 to date. Ore mined was hematite from San Bernardino county which went to new steel mill at Fontana, magnetite from Shasta and magnetite sands from Santa Cruz county. State quicksilver total was 33,948 flasks valued at \$6,177,159 f.o.b. mine, coming from 86 mines in 17 counties. 1942 production was 30,087 flasks.

Santa Fe, New Mexico . . .

John M. Kelly, director state bureau of mines, and Charles Johnson of Silver City, U.S. Bureau of mines, announce they will ask government for \$100,000 for 1945 program to investigate iron ore deposits near Silver City and in southern New Mexico; four fluorspar deposits, one near Grants, two near Deming and one near Silver City, and one coking coal deposit near Carthage. Current year's allocation of \$30,000 is being used to study deposits of fluorspar, used as a flux.

GEMS AND MINERALS

ARTHUR L. EATON, Editor



OVER ONE THOUSAND ATTEND SOUTHWEST MINERAL EXHIBIT

Over 1000 persons attended the seventh annual gem and mineral exhibit of Southwest Mineralogists at Harvard playground April 1 and 2. Copper minerals were featured. Awards were made as follows:

Minerals, judged by variety, quality and rarity—Harold Eales, 1st; Florence Hake, 2nd; Ethel Prosser, 3rd.

Crystals, judged by variety, quality and rarity—Ruth and Franck Stillwell, 1st; Harold Eales, 2nd; Ellsworth Beach, 3rd.

Polished Flats and Nodules, judged by quality of workmanship, variety of specimens, and outstanding material—Harold Lippitt, 1st; Albert Hake, 2nd; Ethel Prosser, 3rd.

Cabochons, judged by quality of workmanship, variety of specimens and outstanding material—Dr. H. E. McKibben, 1st; Bud Prosser, 2nd; Albert Hake, 3rd.

Aircraft (including polished material for personal adornment, articles of utility and pure art), judged by quality of workmanship, effort and originality—A. C. Barnes, 1st; Jeane and Harold Lippitt, 2nd; Bud Prosser, 3rd.

Judges were Thomas Daniel, Gordon Funk, Glenn Harmas and Richard R. F. Lehman.

STAR QUARTZ FOUND IN CALIFORNIA LOCALITIES

Asteriated or Star quartz, of several distinct types, has been reported recently from many locations in the Southwest. As the star is distinctly connected with crystal structure, it always shows the six points of the hexagonal system. Carson City, Nevada, provides bright pink rose quartz with fine stars. Some of this type has altered in color from rose to lavender.

Jacumba, California, has produced a whitish to blue grey vein quartz, seldom larger than two inches, with a distinct star only when properly cut in cabochon. Star rose quartz has also been found in Black canyon, near Mesa Grande, California, and near Campo. Quartz from both of these latter locations has a tendency to fade completely when exposed to the direct sunlight.

MEXICO'S NEW VOLCANO SIMILAR TO VESUVIUS

April eruption of Mt. Vesuvius in Italy serves to call attention to the similarities between it and El Paricutín in Mexico. Both are small volcanoes, as Vesuvius is only 4267 feet above sea-level, and neither approaches the giant bulk of 14,000-foot Mauna Loa nor 10,000-foot Mt. Etna. But there their mediocrity ends. Many of the larger volcanoes are the "quiet" type. Records show that many of these erupt without earthquake or explosion. But both Vesuvius and El Paricutín are of the "explosive" type. El Paricutín was born one year ago with an earthquake and explosion and has been in violent action ever since. Vesuvius becomes so violent at times that it has been used as a classic example of explosive volcanoes. Its present eruption, although violent, is not a big one from the geological point of view.

OLD BALDY IS NAME OF NEW LAPIDARY SOCIETY

John J. Brice, Pomona, California, reports organization in 1943 of Old Baldy lapidary society, inc. Purpose of the society is promotion of good fellowship among amateur gem cutters of the locality; improvement of members in art of cutting and polishing various rocks and gem materials; cooperation in solving members' problems of cutting and polishing; collection of materials for cutting and polishing; and providing opportunity for purchase, exchange and exhibition of specimens and materials.

Officers are Wm. Dyer, 220 E. Alosta, Glendora, president, and Elmer Teague, San Dimas, secretary-treasurer. Meetings are third Mondays at members' homes. Membership is limited and only those who cut and polish may join. Members live in Glendora, Covina, San Dimas, Claremont, Pomona and Ontario.

Jerry Lauderlark spoke on flints of Brandon, England, at March meeting held at home of Mr. and Mrs. Ellis Johnson, 3425 Padua Av., Claremont. Lauderlark displayed ancient tools used in the flint mines of Brandon and also some flint arrowheads of his own making.

INYO COUNTY PRODUCES BULK OF STEATITE TALC

Otis Booth of Sierra talc company states that 95 per cent of high quality steatite talc used in all types of American war production comes from Inyo county. Some comes from Montana.

Talc is used in making paint for ships as it gives paint a low reflective quality—especially valuable in camouflage.

Booth says that versatility of talc's uses is becoming greater with war experimentation. Fired talc has been found to have a harder durability than steel allows. Nozzles of sand blasters and other equipment now are being made of fired talc.



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Large Buds 50c to \$1.00 each
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AMONG THE ROCK HUNTERS

Chester Howard spoke on meteorites at April 11 meeting of Texas mineral society, Dallas. L. D. Van Cleave sent a box of tri-state minerals to the club as a grab bag. Chemistry of Rocks was subject of Dr. L. A. Nelson's talk for May 9 meeting. Annual election of officers is scheduled for June meeting. All Texas collectors are invited to attend meetings, according to Mrs. A. L. Jarvis, secretary.

Leland S. Chapman's "What Is Your Mineralogical IQ" in East Bay's Rockpile leaflet propounds many difficult questions—difficult unless you have a thorough knowledge of minerals and mining.

W. Scott Lewis has mounted extremely thin sheets of a Canadian phlogopite mica between glass plates. When held close to the eye toward a bright light asterism appears. This star effect is due to microscopic crystals of tourmaline or rutile in the mica.

Rocky mountain federation is preparing a circulating collection. The Arizona unit is being arranged by H. S. Keithley, Mrs. J. E. Speck and P. J. Hickey. Every member is asked to help.

Mrs. Zella McCullough, secretary, reports from Modesto that Mother Lode mineral society is up and coming under new president, A. J. McMeekin. Well attended meetings are varied, interesting and instructive. A representative of the magnesium company of Manteca was guest speaker at April 28 meeting. He illustrated his talk with a colored motion picture.

Dr. A. Goetz of Cal Tech lectured about atoms and electrons at March meeting of Los Angeles mineralogical society. Mont Forbes preceded Dr. Goetz with a brief outline of the life of Joseph Le Conte who spent 32 years in geological work for UC.

Dr. Bronson F. Stringham, assistant professor of geology at university of Utah, addressed April gathering of mineralogical society of Utah on geological problems of Utah.

C. L. McCullough, past president of Mother Lode mineral society, Modesto, has been transferred from San Diego to Maryland.

B. L. Jones has moved from San Dimas to Gerber, California. Jones specializes in Yermo palm but also has a large collection of other petrified woods and agates.

Leland Quick, DM's Amateur Gem Cutter editor, addressed the Metropolitan Club of Los Angeles, April 5, on subject of "The Fascinating Avocation."

President and Mrs. Standridge were April program chairmen for Southwest Mineralogists. On the 7th, President Standridge gave a talk on diamonds. Dr. Doe lectured on mineral identification at April 21 meeting. Field trip for the month was to the Standridge home.

Membership of Mineralogical Society of Arizona, Phoenix, has reached 150.

Gallium, according to W. Scott Lewis, may become useful in the future if it ever is found in sufficient quantity. Present chief use is in making medium high temperature thermometers. It is a white metal which melts at 86°. Specific gravity 5.95. Water has no effect on it and it oxidizes very slowly in air; can be dissolved in ammonia or potassium hydroxide; only common acid acting on it is hydrochloric. There is no generally recognized ore of gallium.

Walter Rosenfeld of Bell high school spoke on ceramics and pottery at April meeting of Long Beach mineralogical society. Lead and zinc minerals were featured. The gem cutters displayed their chalcedony. April lapidary meeting was held at the Gordon home.

Francis J. Sperisen gave cutting and polishing hints for East Bay mineral society at April 6 meeting. He also discussed outstanding books on minerals. Lewis J. Renton showed kodachrome slides of minerals at April 20 meeting. This collection was shown at the New York world fair.

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INTRODUCTORY OFFER—One dollar each lot. Five all different Fluorescent Agates—polished. Thirty rough Mexican Opals. Fifty nice pieces Turquoise. Twenty different polishing specimens. Postage ten cents. Minerals and gems on approval. DR. RALPH MUELLER, Professional Building, Kansas City, Missouri.

AGATES, Jaspers, Opalized and Agatized woods, Thunder eggs, polka dot and other specimens. Three pound assortment \$1.50 postpaid. Glass floats, price list on request. Jay Ransom, 3852 Arboleda Ave., Pasadena 8, Calif.

\$2.50 brings you prepaid six rare and beautiful crystallized Arizona minerals. Vanadinite, Dioptase, Wulfenite, Willemite, Chrysocolla, Azurite. Specimens 1½x2 or larger. Wiener Mineral Co., Box 509, Tucson, Arizona.

100 Jewelry Stones removed from rings, etc., \$2.00. 12 articles of Antique Jewelry, rings, pins, etc., \$3.00. B. Lowe, Box 311, St. Louis 1, Missouri.

Choice Palm Root—Full of eyes showing root and trunk structure. Very colorful. Sliced for Cabochons. 25 cents per square inch. Satisfaction guaranteed. GASKILL, 400 North Muscatel, San Gabriel, Calif.

Swisher's rocks, minerals and petrified woods. Island corals, shells, shell costume jewelry, fine copper minerals from Bisbee, Arizona. Fine quartz crystals from Arkansas. Also fine line of Art Figurines. Swisher's, 5234 So. Broadway, Los Angeles 37, California.

6 prehistoric lizard scales and two beautiful Colorado minerals 3 x 3, \$3.00. One fluorescent mineral 3 x 3, \$3.00. Fluoresces a velvet red spotted with other colors. Cobalt in nickel. Jack the Rockhound. P. O. Box 86, Carbondale, Colo.

Serpentine core drillings 1 to 2 in. diameter to 12 in. in length. Nice for cabinet. 15c each. Postage please. C. Earl Napier for Rock. Yosemite Highway above Knights Ferry, Calif.

INDIAN RELICS, Curios, Coins, Minerals, Buttons, Old Buttons, Old Glass, Old West Photos, Weapons, Catalog 5c. Lemley Antique Store, Osborne, Kansas.

ROCK COLLECTORS, ATTENTION! Notice address change. 2 only—Choice iron pyrite XL groups 9x7x3-inch and 7x5x3½-inch each at \$25.00. 1 only—Choice limonite after pyrite XI, group, 7x5x3½-inch, at \$25.00. 1 fine benitoite, neptunite, natrolite, spec. 2½x1½-inch over 26 XLS at \$25.00. 1 museum spec. 12x11x2½-inch over 60 XLS, \$100.00. 1 large sky blue fluorite and barite XL, group 11x6x5-inch \$35.00. Other groups from \$2.50 up. Groups of amethyst phantoms in quartz. XLS \$2.50 to \$7.50. 1 museum group 15x9x5-inch over 100 points and lots of pyrite XLS, \$100.00. Past offers all good. No catalogs. The Rockologist (Chuckawalla Slim), Garvey Trailer Park, 941 E. Garvey Blvd., Garvey 32P, Calif.

Montana Moss Agates in the rough for gem cutting, \$1.00 per lb. plus postage. Elliott's Gem Shop, 26 Jergins Arcade, Long Beach 2, Calif.

50 assorted ring stones, including genuine and synthetic, \$7.50. Genuine Zircons, blue or white, 3 for \$3.75. Twelve genuine Cameos or Opals, \$2.50. B. Lowe, Box 311, St. Louis 7, Mo.

Tourmaline matrix, in quartz crystals, \$1.00 to \$30.00, tourmaline pencils, 50c to \$5.00. Essonite garnet-green-clusters, 50c to \$3.00, unique specimens. Sagenite agate, \$1.00 to \$4.00, specimen rough nodules. Gem list 10c. Return specimens if not satisfactory. The Desert Rats Nest, 2667 E. Colorado St., East Pasadena, Calif.

Gem Jasper from Indian Ridge, Ohio. Beautiful pastel colors. Makes lovely cabochons; 2 ounces rough for only 25c, or \$1.50 per lb., postpaid. Lake Superior Agates 10c each and up. Wyoming Jade, gem quality, slabs of all kinds. Send for list. James W. Riley, RR. 2, Springfield, Ohio.

Minerals, Fossils, Gems, Stamps, Coins, Pistols, Glass, Bills, Indian Relics, Bead Work. Catalogue 5c. Cowboy Lemley Curio Store, Las Cruces, New Mexico.

DESERT QUIZ ANSWERS

Questions on page 8

- 1—Pueblo Indians, who supplicate gods for rain by prayer-dance ceremonies, are sometimes called Rainmakers.
- 2—Prehistoric Lake Lahontan, filled by water from snow and glaciers of Sierra Nevada, once covered most of present state of Nevada.
- 3—Brothers of Light, or Penitentes, are members of secret New Mexico religious order.
- 4—Poston was a politician, Arizona territorial delegate, Indian agent and Register of U. S. land office.
- 5—Indians use Aragonite, from Butterfly mountain near Suanee, New Mexico, for their "Mirage Stone."
- 6—Look for animal tracks, especially if numerous enough to make trail which nearly always leads to source of water.
- 7—By recent official survey, Twenty-nine Palms elevation is 2000.27 feet.
- 8—Father Kino was a Jesuit.
- 9—Saguaro. 10—Bear.
- 11—Gulf of California. Very little came from Pacific.
- 12—Burdick, in his book of that title.
- 13—Epsom salts. 14—Midsummer.
- 15—Native.
- 16—Weave several together, for no spider spins web so coarse.
- 17—Yucca. 18—Highway 40.
- 19—Laguna.
- 20—Santa Catalina Mts., elevation 9150 feet.

Kenneth C. Peer, chief chemist, and Donald E. Thorpe, associate chemist of the Ragooland-Broy laboratories of San Francisco, state that the most accurate and reliable means of identifying beryllium glucinum (from Greek word meaning sweet) is through application of quantitative spectrographic methods. There are about 20 beryllium-containing minerals so far listed, but only a few of these are of proven commercial value.

Scott Norviel continued his lectures on determinative mineralogy, chemical characteristics, at April meeting of Mineralogical Society of Arizona. May 8 meeting was in charge of the juniors.

"Three swaps," says Dick Lehman, "are as good as a field trip."

Mineral of the month for Los Angeles mineralogical society was copper. Motion pictures (courtesy U.S. bureau of mines) of mining and smelting of copper were shown at April dinner meeting. Members displayed beautiful and rare copper specimens, and traded extra material. Chuck Jordan had Bisbee copper specimens for sale.

San Diego mineralogical society held a gem exhibit April 16 at YMCA. Emphasis was placed on stones from San Diego county, but 47 states were represented. C. A. Scott, member, demonstrated cutting and polishing technique. San Diego county is especially rich in such gems as tourmaline, kunzite, beryl, topaz, garnet and smoky quartz. Some strategic minerals also are found in the county—among them quartz, Iceland spar and mica. A fluorescent display was an interesting feature of the exhibit; also a display of wartime strategic minerals.

Earl B. Noble spoke on "A geologist looks for oil" at April dinner meeting of Pacific mineral society. Noble is chief geologist for Union oil company of California and familiar with all phases of oil exploration. His talk was illustrated by lantern slides.

Mrs. Ralph Houck was lucky winner of the cartload of specimens prepared by Long Beach mineralogical society. Milo Potter constructed the cart and members donated specimens to fill it.

Attendance has been increasing in the Dinuba lapidary class which meets Tuesdays 7:30-9:30 at the high school. Dr. Weddle of Miramonte was a February visitor.

Mineralogical society of Utah staged a '49er party March 25. Besides the usual frontier entertainments, an exhibit and sale of specimens was held for rockhounds.

March bulletin of Sequoia mineral society lists 90 paid memberships.

Arizona Rockhound record states that so far as is known, only one Arizona mineral, lepidolite, contains rubidium. Rubidium is a soft, silvery white, wax-like metal which melts at 38½ degrees. It rapidly oxidizes in air and will decompose water with ignition and liberation of hydrogen. In radio it is used in the manufacture of vacuum tubes. A pellet of rubidium ignited in a tube produces an almost perfect vacuum. A large part of the rubidium of commerce comes from the carnallite deposits of Solikamsk in the Soviet Union. Name rubidium comes from color of spectrum-red.

John G. Talbott, assistant superintendent General Fiber Products company, Los Angeles, is in charge of the plant at Kingman, Arizona. He is interested in cutting agates and petrified woods.

Cogitations . . .

Of a Rockhound

By LOUISE EATON

When you sees a rockhoun's ad sumwhere you don't expect, it's kinda like bein in a strange place 'n meetin' sumwun from your own home town. You feels as if you'd met your closest friend, even tho you didn't know each other much uv eny when you both was at home. That's just the heart warmin' feelin' you gets when you meets a rockhoun advertisement in an unrockhoun magazine.

What is wun man's meat, says sumwun, is a 'nother man's poizun. That sort uv applies to rockhouns 'n what they collects, too. Wun fella can see only sage-nite 'n th next wants just opals 'n sumwin elst has a yen f'r palm. This makes tradin' a bit disatisfactory, becuz folks is slightly disappointed if they don't receive their own special brand uv specimens. However, rox sent in trade is most generally better lookin' inside than they appears on the surface at first glance. Furthermore, rockhuns is good sports 'n never crabbs mutch.

HUGE SALT DEPOSIT LIES DEEP IN WEST VIRGINIA

It has been reported from the state of West Virginia that one of the largest beds of pure salt anywhere in the world has been discovered in the norther part of that state. It is estimated to be about 98 per cent pure salt and to lie nearly one and one-half miles below the ground surface. The bed is thought to contain from seven to ten trillion cubic feet of salt. The method of mining will have to be similar to that used to recover sulphur in eastern Texas and Louisiana. Hot steam is pumped down to the salt deposit, and the hot saturated salt solution shortly afterwards is pumped back to the surface, where it is evaporated to recover the salt crystals.

Peter W. Burk, secretary pro tem of Orange Belt mineralogical society, reports that the group studied strategic minerals at April meeting held in San Bernardino junior college. Mrs. Howard Fletcher spoke on tin and its occurrences; Ross Nussman on lead and zinc; R. H. Ells on non metallic mica. Kenneth Garner told of the importance of these minerals in war production.

A strange sand concretion found recently near Coyote Wells, Imperial county, California, is shaped like a covered dish, flattened on the bottom, and about 8 inches through in any direction, deeply corrugated on the top. When the top or lid was first removed, it was found that the large smooth pebble around which the concretion had formed had completely disappeared, leaving a large cavity. In this cavity were 15 or 20 small iceland spar crystals of varying sizes, most of them quite transparent or translucent.

Among recent finds of Indian relics in Imperial county, California, are: One eight-inch ceremonial spear head, perfect, near Palo Verde; seven large arrow points, one especially fine, near Sidewinder; one arrowhead, crude; one piece of pottery very small but perfect; one oak cooking paddle; one common opal ornament; one jasper ornament, all northwest of Coyote Wells.

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Triboluminescent, fluorescent, and phosphorescent, this SPHALERITE is the most sensational material to come to the attention of the mineral collecting fraternity for a long time. This new sphalerite fluoresces and phosphoresces a brilliant golden color, while the calcite with which it is associated in most cases phosphoresces blue. This material shows just as much fluorescence under the inexpensive black bulb as it does under the cold quartz lamp. But this fluorescence is only part of its unique qualities. When it is scratched with a knife blade or a nail, in fact anything hard, it gives off a brilliant array o' "cold" sparks in the dark. There is only a limited quantity of this material available, so hurry your order to be sure o' getting a specimen. 1x2—50c, 2x2—\$1.00, 2x2½—\$2.50, 2x3—\$4.00. Larger sizes—prices on request.

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All kinds of Scarabs.

CEYLON ZIRCONS—50c per carat.

STAR SAPPHIRES—\$1 per carat.

COLOMBIA EMERALDS—\$10 up each.

Synthetic Stones. Rare Cameos, Necklaces, Stickpins, etc. Rough Gems for Cutting in Garnets, Tourmalines, Quartz-Topaz, Nephrite, etc.

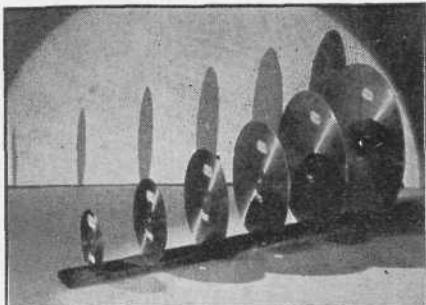
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and polishing equipment. Lelande Quick, who conducts this department, is former president of Los Angeles Lapidary society. He will be glad to answer questions in connection with your lapidary work. Queries should be addressed to Desert Magazine, El Centro, Calif.

By LELANDE QUICK

When I mentioned the danger of gem cutters contracting silicosis in April Desert Magazine, and requested information regarding methods of prevention, I had in mind that there probably was some simple arrangement available somewhere that could be stocked by gem dealers. Many helpful letters have come to me suggesting all manner of respirators, from those used in mines and quarries to those used by spray painters. These are available at mining supply or paint stores and the names of a few of them are: Dupor's No. 24 (\$2.75), Willson, Pulmoxan, and McDonald's "Dustfog" respirators. There are many others but if you rush out to buy one don't buy just a respirator. Some are approved by the National Safety council and the U. S. bureau of mines for Type A dust, gas, fumes, smoke, sprays, etc. In purchasing a respirator you should be sure that it is approved by authorities for silica dust to avoid wasting your money and misplacing your confidence.

All respirators make you look like a man from Mars and I have no doubt they are all bothersome and uncomfortable. To adjust one each time you go to the sanders means another operation and it seems to me, as I have said before, that a hospital mask or just a handkerchief would be adequate protection for a man who uses a sander an hour or so during a week. At least the convenience of the mask will encourage one to wear it which is certainly more protection than an involved respirator that would hang on a peg most of the time. Enterprising dealers should investigate the situation, stock a good respirator or mask and then let the gem cutting fraternity know about it. Captain John J. Spencer of Seattle says the mask is effective and comfortable.

Dr. Nakadate of Poston, Arizona, sends me generous information on the "stone cutter's disease" or silicosis. He also suggests the wet gauze mask (soaked in cold cream) as the simplest, and possibly the most effective, prophylaxis and he also reminds me of the real possibility of inhaling metallic substances which could give systemic poisoning. For instance one could encounter trouble after a few hours of grinding malachite and inhaling the copper.

Once the disease is contracted there is no cure, although the doctor advises some success has been achieved in treatment by insufflation of aluminum powder. David Allard of Redondo Beach, California, quotes from a Collier's magazine article advising that a small amount of aluminum powder blown into the air and breathed by the gem cutter will combine with the silica to form a harmless substance, but I believe this idea is impractical except in industry where it is supervised by safety engineers. We thank our readers for their many helpful suggestions and interest and "a word to the wise is sufficient."

This page of Desert Magazine is for those who have, or aspire to have, their own gem cutting and polishing equipment. Lelande Quick, who conducts this department, is former president of Los Angeles Lapidary society. He will be glad to answer questions in connection with your lapidary work. Queries should be addressed to Desert Magazine, El Centro, Calif.

wanted complete outfits indicating they had nothing at all and were just beginners.

There is evidence on every hand that great numbers of people are becoming interested in gem grinding and people are learning that they do not have to have a profound knowledge of mineralogy and geology to make a successful attempt at gem cutting.

In recent months I have been enjoying the experience of lecturing and exhibiting my gems before many organizations, such as Kiwanis, Lions, Rotary and other clubs. The genuine interest in gem cutting has amazed and gratified me. So much enthusiasm has been generated in some quarters that a group in Glendale and another in Westwood, California, have petitioned my aid in organizing lapidary societies in those communities and I am inclined to do so. These are all folks who do not know jade from soapstone and who never saw a diamond saw in their lives. I believe that by fall the equipment situation will be eased to such an extent that everything will be available except motors.

In the meantime I wish that everyone in the Burbank-Glendale area and in the Westwood-Beverly Hills area who is interested in taking up gem cutting would send me a postal in care of Desert Magazine and I will notify each one when organization meetings will be held in August. Obviously I need some experienced lapidaries too but please understand that this venture is not intended to draw members from existing established societies and it is not an attempt to organize new mineralogical clubs of which there are ample. If some experienced folks are willing to help the neophytes I hope they will do so but retain their membership in societies to which they belong at present. As a rule the man who belongs to several societies is a good member of none and almost never is an active member in all.

The Los Angeles Lapidary society long ago reached a closed membership of experienced amateurs. There is nowhere for the novice to go to learn, and the only answer is new societies, preferably community affairs, that are organized by and taught by the old timers who learned it all the hard way. I have no wish to be personally active in any new organizations; my life is too full as it is. But I am anxious to help new groups start off in the right direction and I anticipate many postals and offers of help from the experienced.

LAPIDARY HELPS AND HINTS . . .

Contributed by Harold Odle, owner of the Flathead Museum, Rollins, Montana.

For the man with no tin oxide, rouge will cut anything up to and including the garnet.

• • •
Tripolite is not tripoli at all. It is diatomite with little polishing value.

• • •
Real German tripoli is part moissanite, a mineral silicon carbide, and it will polish anything but a diamond.

• • •
Any common red clay carries enough alumina to polish slowly.

• • •
Nearly all communities have road cuts where the sub-soil is exposed and rotten stone can be secured between the hardpan and the top soil. It is an excellent polishing agent.

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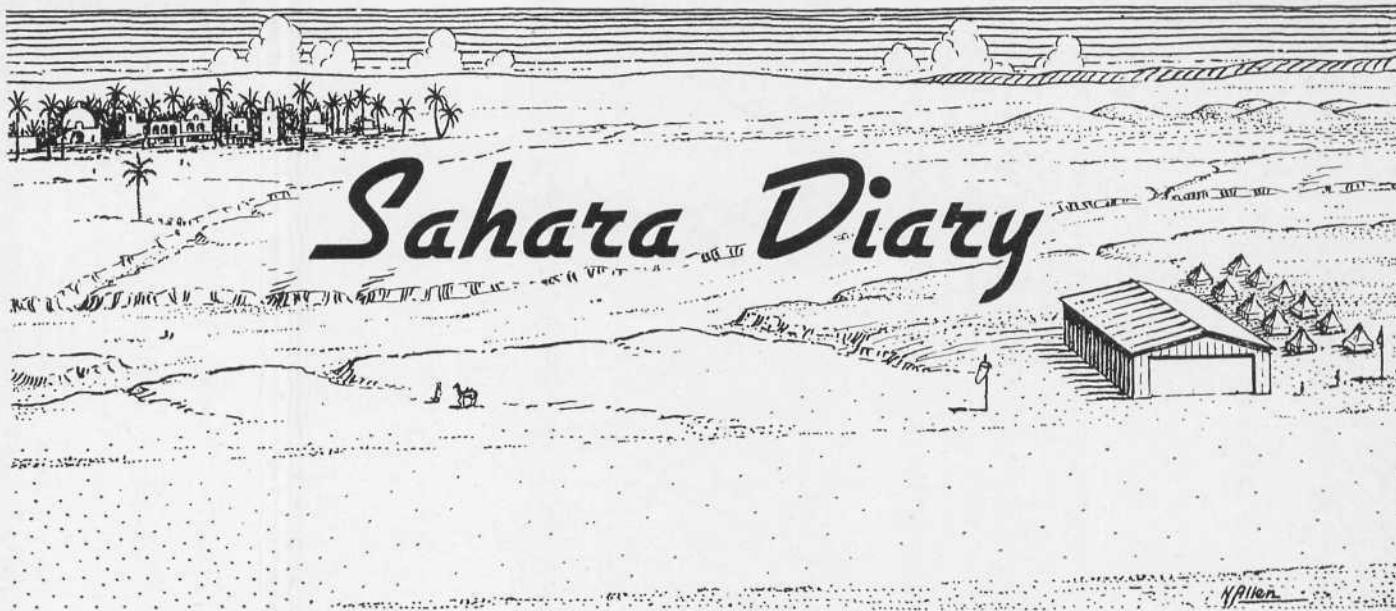
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Sahara Diary

By RANDALL HENDERSON

WITH THE ALLIED FORCES IN AFRICA—In the peaceful atmosphere of this little Sahara oasis where I have been stationed the past six weeks, it is hard to realize that in other parts of the world men are fighting a grim war for survival.

Planes stop here every day. Men in uniform climb out of them and stand by while the mechanics refill the fuel tanks and check various gadgets and controls—and then motors roar and the huge craft glide off the runway and disappear in the haze of the distant horizon. They belong to a world that seems as remote as the planet Mars.

In this primitive community it does not appear difficult for men to dwell together in peace. French, Senegalese, Arabs and Americans—we all are neighbors. We greet each other with a friendly salute—sometimes a French salute and sometimes American, but it makes no difference. We draw our water from the same wells. We have no common language except that universal symbol of goodwill—a smile. It is good to live among people who can laugh—and do. I do not mean the artificial laughter of a drinking party or the polite grimace of courtesy. I mean the smile that springs spontaneously from humans with goodwill in their hearts.

For more than a year I have been living close to the primitive tribesmen of Africa—dark-skinned, unschooled, uncivilized according to our standards. Both in the jungle and on the desert I have found them responsive to friendliness. And I have asked myself these questions: Why have we allowed the grim business of getting ahead in the world to crowd out so much of the warmth in our natures? Why does wealth and power make men haughty and cynical? Are we not paying too high a price for the gadgets and comforts of our civilization when these things are acquired at the expense of good wholesome neighborliness?

I do not know the answers, but I suspect that if we could trace the causes of this world-wide war down to bedrock fundamentals, we would find that it is because we have drifted too far away from the virtues which come from close association with the good earth. One of those virtues is the honest smile that comes from a man with neither greed for personal power nor the vanity that so often comes with the possession of excessive wealth.

Anyway, do not look down on these African savages because their skins are black and they can neither read nor write. I have found them good neighbors.

* * *

Twice a week the transport planes bring us fresh meat from a major base several hundred miles away. One evening when our meat ration was steaks we went out among the sand dunes and broiled them over an open fire. It is an old desert custom where I live at home. Since most of the men in the outfit come from homes east of the Mississippi, this was their first taste of desert barbecued steaks. The verdict was "good chop." By the time we got around to "thirds" the fresh meat was exhausted and we were finishing with canned vienna sausages. There were still a few of these left on our improvised grill when the dinner was over and we invited the Arab mess boys to help themselves. They would have none of them. The prophet Mohammed put a taboo on pig meat.

* * *

One afternoon this week I had to go out and shoo some camels off the runway. One of them was very persistent, and three times during the afternoon I had to go out in my jeep and throw rocks at him.

Caravans come in every day, unload their packs, and then head off again toward the horizon. They spend as little time as possible in the oasis for their food is the grass and shrubs that grow out on the desert and they get nothing to eat while they are in the village. However, there are always a few of them in the oasis overnight, and near sunrise they awaken the community with their noise. My vocabulary doesn't seem to have a word that describes the vocal notes of a camel—but it is somewhere between the bawl of a cow and the roar of a lion. One overnight visitor recently asked me if the noise that awakened him was made by lions. I assured him it was camels. He agreed with me that only a very tired old lion would roar in such dismal tones.

* * *

Last month I took issue with the historian who attributed the failure of the American experiment in camel transportation in the days before the civil war, to the fact that the camel's feet would not stand the rocky trails on the desert of the Southwest. I stated that the camels here travel over the rocks without injury to their feet. And that is true. But an officer in the French Camel corps told me there is another breed of camels in the desert region to the east of here, which can be used only on sandy trails. Its feet are too tender for the rocks. My apologies to the historian, whoever he was.

* * *

Recently some members of the Camel corps spent a day here

on maneuvers. Without doubt they are the most colorful soldiers in the world. Some of the platoons wore flowing garments of red and white and others wore white and blue. Hollywood never has turned out a prettier job of costuming than was done by the Frenchman who designed these uniforms.

The camels with their dark-skinned riders and French officers came in silently one morning—and then disappeared as mysteriously as they had come. A French officer pointed out one beast that had not taken a drink since November—and this was in March. They do not like cold water, and drink little during the winter. A drink a week serves them in summer.

* * *

The cinema is our evening diversion at this isolated oasis on the Sahara. Our theater consists of a small screen nailed on the side of the adobe mess hall, and a portable projector. The men bring their blankets and pillows and spread out on the sand to watch the pictures. The mess hall yard is surrounded by a low mud wall, and back of this wall the Bedouins and Senegalese from the oasis gather to watch the movies. Our turbaned guests cannot understand the words that come from the speaker—but they follow the story amazingly well. We know from their reactions as the plot unfolds. Pictures of grain fields and forests and running water stir them more than machinery and sophisticated settings.

The opportunity we have given these people to see our picture programs has created goodwill in an unexpected direction. Most primitive people are reluctant to be photographed by white visitors. In this settlement the natives are eager to have their pictures taken. "Cinema" is a password that opens the door to the camera hound.

In this community where four languages are spoken, there are a few English words that have universal exchange value. "Finish" or "finee" covers a wide range of meaning—it is all gone, it is broken, I have none, it is time to quit work, I am out of money, and a flock of other negatives. "Very good" and "no good" are understood by everyone. And of course all the youngsters can say chewing gum. They are inveterate beggars.

* * *

After all, the most interesting phase of any land is the people who dwell there. My acquaintance with the native population of this oasis began with the houseboys on duty in the barracks—and Jello. In the bachelor officers' quarters we have Ahmed and Taleb—two bright youngsters who make the beds, shine shoes, do the laundry and run errands. They have reduced the efforts of housekeeping to its lowest minimum. Some men are more critical than others about such things as well swept floors and properly made beds, and these likeable scoundrels know the minimum demands of each of their masters, and they do just that and no more. Taleb has acquired the art of making up a cot that will pass a perfect army inspection on the surface—with the bedding beneath in complete confusion.

The most faithful servant we have is Jello, the burly black soldier assigned by the local French commandante to guard our barracks. He is on duty 24 hours a day with instructions to keep all other natives outside the adobe wall which surrounds our mud house. He is quite meek and obliging toward us. But let an Arab peddler set foot inside the gate, and he bristles into a domineering policeman who will tolerate no back talk. I don't know where he got his name, for he understands not a word of English, but I suspect it was given to him by the American soldier who first saw him wearing the red fez that is part of his uniform. He keeps it on day and night. Also, he is quite proud of his name, and all my efforts to find out what he was called before he became Jello have failed. He loves to have his picture taken, and when I start out with my camera he tags along—and grins with pleasure when I invite him to pose in the photograph.

Ahmed, Taleb and Jello! You will hear more about these dark-skinned members of our military family here. They play a lively part in the daily drama of life in this Sahara oasis.

* * *

Most of the plants which grow on this desert are complete strangers. But I have met a few old friends—and enemies. The first shrub I recognized when I jeeped across the desert the day I arrived here quite obviously was a first cousin to the milkweed. As a youngster I spent too many days hoeing these pesky weeds out of the cornfield ever to have a kindly feeling toward them. But away off in this remote corner of the world it gives one a sort of warm feeling to meet even an old enemy. The Sahara species is a big hardy shrub that appears in the most unexpected places.

I miss the greasewood and burroweed here. There is nothing that takes their place. Much of this area is as barren as the floor of Death Valley. So far, I have found but four plants in blossom. One resembles locoweed, but has a yellow flower. Another is a species of Palo Verde. I believe I have seen the same tree in the patio of the Harlow Jones home at Twentynine Palms. The third is a thorny perennial with a dainty little ball of yellow fluff growing beside each thorn. Out among the dunes grows a bushy little plant with leaves like the sweet-potato and a blossom like morning-glory. Then there is a desert gourd much like those I have seen along the Colorado river—the wild gourd that the coyotes like so well. And a grass that resembles galleta. The camels feed on this grass.

Most important of all of course is the native date palm. There are many hundreds of them growing along a wide sandy wadi at this oasis. An Arab counts his wealth in camels, goats and palm trees. Most of the trees, I am told, are owned by families. But concentration of wealth is a problem here the same as in USA. A few rich Arabs—the "sixty families" of the Sahara—have acquired large numbers of the trees which are "sold" to the poorer Arabs during the harvest season. Along in June when the fruit begins to set, the nomad tribesmen flock in here from all corners of the compass and "buy" as many trees as they can afford—at from 200 to 300 francs a tree. That is \$4.00 to \$6.00. They camp under the tree until the fruit is harvested, and then the palm reverts back to its original owner.

The palms here are not as graceful as those in the Coachella valley in California. These have short stubby fronds which grow in a top-knot at the end of a long scraggly trunk. But they have furnished an abundance of sweet nourishing food for these desert tribesmen for countless generations.

A palm must have its roots in moist sand. Beneath this oasis is a great underground reservoir that extends for miles along the wadi. There are hundreds of wells, with water at a depth of from 12 to 20 feet. The water is hard. It takes lots of soap for the laundry and toilet. But it is sweet—and despite the strong flavor of the chlorine with which all our drinking water is treated, it serves very well. There is enough not only for the domestic needs of the oasis, but there are scores of tiny gardens, all irrigated with water drawn by hand with goatskin buckets.

If my tour of duty here continues through the harvest, I am going to buy a palm tree. Taleb has promised to pick the fruit for me.

* * *

Out on the ramp in front of my office a motley crew of Arabs and Senegalese is digging rocks and filling the holes. When I glanced through the door this morning, one of them appeared to be loafing on the job. He was squatting on the ground, apart from the others. I watched him a few moments. He wasn't loafing. He was saying his prayers to Allah. When he had bowed his forehead to the earth the proper number of times he gathered his pick and resumed his work. Allah surely has not showered these people with many material blessings. But they have faith nevertheless. And that is something—a very important something.

* * *

Midday temperatures reached 98 degrees today. But that is not uncomfortable in this dry atmosphere with a breeze blowing. Warmer days are ahead—but the Arabs and I will not mind. We are conditioned to high temperatures.



Just Between You and Me

By RAND HENDERSON

ELECTRICITY has come to Camp Tarawa! The offices and headquarters buildings have been wired for some time, but last week light was brought to the tents which serve as living quarters for the men. It was quite an occasion, and has brought marked changes in our living habits.

Candles have been scarce, and the kerosene lamps which some of us found in a nearby town were inefficient. As a result, light has been community property. Several of us from different tents would pool our candles and lamps in one tent, and that would serve as the recreation hall for the night. It was always congenial and lively, but for those who wanted to read or write concentration became a supreme achievement.

Now every tent has its light, and those who enjoy privacy occasionally can find it.

* * *

It has been an interesting experience watching this camp grow. When we arrived here from the Gilberts, after many weeks aboard ship, only a few tents dotted the site. First event of significance was the piping in of water. The days were past when we had to wash clothes by tying them to a line and heaving them over the stern of the ship to drag for a couple of hours.

Then the post exchange was built. I felt like a small boy in his first toy shop when I walked into the PX, picked some American change out of an assortment of Jap yen notes and shillings and pence from my pockets, and proceeded to stock up on soap, tooth paste, candy, writing paper and other items which had run short.

Bigest event of all was the day mail call resounded through camp. Bags of letters, packages and papers poured in on trucks for several days. Letters ranged from three months to just a few days old, but we arranged each bunch in chronological order, and read and enjoyed each as if it just had been written. Some were newest photographs of wives, sweethearts and children, to be passed around and admired by our buddies.

For all, there was inspiration in that mail, bringing with it a reassurance that the campaign past had been worth while.

Life now is enjoyable, even relatively luxurious. We are appreciating the comforts around us even more than we did when we were temporarily separated from them by the campaign. We're learning to enjoy what we have. It's a valuable lesson, a bit of wisdom that will give us happiness when we return to our various civilian pursuits. We are building many such attitudes in our overseas adventure. We are learning to feel the respect and longing for the United States which peoples of other countries share. We are obtaining a clear perspective of the strengths and weaknesses of our homeland.

The majority of us are just beginning to fit these fragments of knowledge and understanding into a philosophy which will carry us through life. I have an idea that it will be a good philosophy, and strong.

* * *

During the past several weeks I have been interspersing my regular duties with instruction in radio classes. It is surprising and gratifying to see how quickly men learn out here. Many educators are amazed by the speed with which service schools in the States turn out trained men, but here we have cut in half the time required by those schools in the States.

The reason for this stepped-up learning ability of men overseas I do not know. Perhaps it's because in combat they've seen the great necessity for knowing a job well and for doing it well. Whatever the reasons, the conclusion is the same. The time expended in formal education, particularly in the higher branches of learning, can be reduced 50 to 75 per cent by employing the techniques of service teaching, and by simulating in so far as it is possible the conditions of service schooling. Men who have known the speed and efficiency of these schools will not passively pursue the leisurely course of present day education when they return to schools and colleges!

* * *

The most over rated angle of this war, from the standpoint of the men who are fighting it, is the Pin-Up picture. I refer to those glamour shots of actresses, models, etc., which by virtue of being printed as near to life size as the particular publication will allow, have been dubbed "pin-up pictures." Presumably, men in uniform throughout the world are to tear them out and pin them over their bunks as soon as they arrive, there to remain the center of attraction until the "powers-that-be" decide another young lady is due to provide inspiration for the war effort.

Now, I have no personal bones to pick with the publicity agents and others who instigate the Pin-Ups. If they feel that they are maintaining international morale, more power to them. But I'd hate to think that the ones I love and respect have the idea that Pin-Ups are the motivation behind my fighting.

Truth is that in 15 tents I just walked into, I counted 38 pictures—three were Pin-Ups, the rest were photographs of wives, sweethearts, parents, children. Those figures speak for themselves.

* * *

So far I haven't seen anything printed about one very domestic function of that Yankee institution, the jeep. When we are living on rations, and a jeep is handy, we cache some cans of the "C" unit around the engine, put a canteen cup of water on the engine block, and within 30 minutes we have a hot meal of stew or hash and coffee.

Whenever I go out in one of these jeeps equipped with radio transmitter and receiver, I wonder about the possibilities of radio travelogs from the desert. A word picture of the scenery while jolting up a remote palm canyon, a conversation with the grizzled old prospector panning for gold beside a stream, an actual record of a typical evening around an ironwood campfire—well, who knows? It's an exciting, strange new world before us. Anything is conceivable!



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